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DIATHERMY IN GYNECOLOGY*

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Diathermy is used in gynecology for four different groups of indications: pelvic inflammations, gonorrhea, noninfectious gynecologic conditions, and cancer of the uterus.

DIATHERMY IN PELVIC INFLAMMATIONS

Pelvic infections of whatever origin almost invariably leave remnants behind which may give rise to distressing symptoms. In all such cases there was originally, during the acute stage, an exudate either in the culdesac and around the pelvic organs, or within the loose connective tissue beneath the peritoneal covering of the pelvis. These conditions are called pelvic peritonitis and pelvic cellulitis, respectively. The exudate may suppurate and turn into an abscess, which then would demand immediate surgical intervention. If, on the other hand, with the passing of the acute stage the intensity of the tissue irritation subsides, the exudate is gradually absorbed in part. A certain amount of the exudate, however, resists absorption. It may form dense and well vascularized adhesions around the genital organs which, in some cases, are of considerable extent. In course of time, these adhesions shrink and lead to dislocation of the organs to which they are attached. Thus, the uterus may be pulled into retroflexion and firmly bound down to the culdesac, and the tubes and ovaries may be affected in like manner. Similarly, intestinal loops and omentum may be drawn down and immobilized in unnatural positions. It is obvious that such pathologic displacements and fixations must lead to anatomic changes and functional disturbances, and it is therefore not surprising that such patients suffer from profuse, prolonged and painful menstruations, from backache and pressure on the rectum and bladder, from sterility, leukorrhea and constipation, and from many other discomforts which, while not dangerous to life, yet cause a constant drain on the physical well being and the nervous equilibrium.

If the exudate was located, originally, in the pelvic cellular tissue, the unabsorbed portion may be transformed into unyielding scar tissue which transects and distorts the parametria; or it may remain in the form of masses of stony consistency which exert a continuous pressure on subjacent nerve trunks or interfere with the functions of bladder and rectum. In such cases there is often a continuous ache along the course of the sacral nerves, marked discomfort in locomotion and during sexual intercourse, pain in defecation, and other distressing symptoms which predestine the patient to a life of invalidism.

In both categories, medical help is urgently needed, and how frequently this is required may be inferred from the vast number of women who come to the private consultation rooms and the clinics with complaints of this kind which, on examination, are explained by remnants of previous pelvic infections.

Surgical treatment, on the whole, is unsatisfactory. Practical experience has shown abundantly that very little can be accomplished by means of conservative operations. Permanent relief, as a rule, can be achieved only by radical removal of the genital organs in their entirety; but as most of the patients are still in the sexually active age, such a mutilation is highly objectionable.

Nonoperative treatment is much more promising. This, in its last analysis, aims at completing the absorption of the exudative remnants which the body was unable fully to accomplish. Restoration, like all other progressive activities of the living organism, is brought about by active hyperemia, and the best means of producing this hyperemia artificially is by the use of heat. The soothing and healing properties of heat have been known and utilized since time immemorial, but it was not until comparatively recently that—principally through the ingenuity of the surgeon Bier of Berlin—the physiologic explanation of the curative effect of heat was understood. The various forms in which heat has been applied in pelvic inflammations comprise hot baths, hot douches, hot compresses, hot water bags and dry heat, and with all of these some results have been obtained. These methods of application, however, have the drawback in common that the heat cannot well be brought into intimate contact with the affected tissues, and that it is difficult to gage accurately the degree of heat employed.

Fortunately, during the more recent past the method of diathermy has been developed that makes possible the direct application of heat to the diseased structures and a variation of the intensity of heat according to the individual needs of the patient. Whereas in all previous methods heat was conducted to the body from without, in diathermy heat is originated within the body. A high frequency current of low voltage, by passing through the body or certain parts of it, transforms its electric energy into heat because of the resistance of the living tissues. The current flowing from a large outer electrode to a smaller electrode in the vagina or rectum thus heats the tissues through which it travels. In the neighborhood of the small inner electrode the heating power is highest because here the electric currents converge so that the density of the current increases. This explains why, by means of diathermy

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—or thermopenetration, as it is also called—temperatures ranging from 104 to 122 F. can be produced within the affected tissues themselves. Figure 1 shows at a glance how this heat penetration reaches the organs and tissues in the pelvic cavity. The heat acts primarily as a stimulant to the vasodilator nerves of the affected zone. As a result, the blood vessels dilate, and into these vessels rushes a large wave of fresh

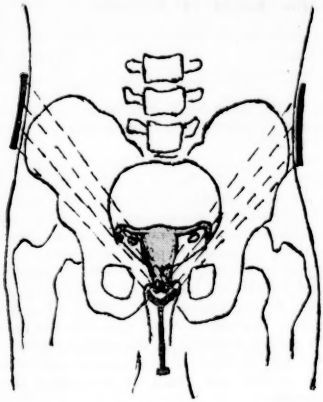

Fig. 1.—Manner in which heat penetrates into the pelvic cavity and tissues.

arterial blood. This serves, in the first place, to cool the heated tissues and prevent burns, and, secondly, to wash away the waste products of former inflammations. The local metabolism which had been retarded by the existing pathologic condition is thereby restored more nearly to the normal. A discussion of the nature of the various biochemical responses of the body to heat would lead too far afield. The reader is referred to an illuminating article on the subject by Pemberton and Crouter.[1] It is also possible that in diathermy obscure electrical effects on the organism are at work, perhaps in the sense of intensifying the vitality of the tissues.

Though this remarkable method is still in its infancy, it is already known that subjective improvement follows its application very promptly. Spontaneous pain as well as the pain of menstruation, of intercourse and of defecation subside very rapidly. The objective improvement follows, in many cases, after a few applications. Exudates diminish in size, and, if not too old and too extensive, may disappear altogether. Adnexal tumors become smaller. Swollen tubes regain normal size and softness. Parametric infiltrations are softened, and dense and unyielding adhesions may become so attenuated as to permit of greater mobility of heretofore firmly fixed organs. Not in all cases can a complete cure be accomplished. In a certain percentage only an improvement is obtained, while there will always remain a certain number of failures. Dittmer,[2] in 1921, gave the most extensive statistics on the subject. Of 937 cases treated, anatomic restoration was achieved in 372, or 39.4 per cent; subjective cure or improvement was noted in 447, or 47.3 per cent, while 115, or 12.1 per cent remained refractory. It is to be noted, however, that Lindemann[3] found that, even in the case of failures, later operations were greatly facilitated by preceding diathermy because of the serous transudation and softening of the pelvic tissues.

As with all other therapeutic methods, the results depend, to a large extent, on the proper technic. My own experience has been obtained with an outer ribbon electrode which encircles the waist of the patient, and a vaginal electrode which surrounds the cervix and thus attracts the electrical currents from all sides. Occasionally, a rectal electrode was found more suitable (fig. 2). As to the dosage, it seems wise not to start with too intensive an application of heat. As a general proposition, 115 F., as registered by the thermometer within the vaginal electrode, is the standard degree. Each treatment should last from twenty to thirty minutes. The number of treatments which may be given at intervals of three days depends on the individual case. The degree of heat and the duration of the treatment should be regulated according to the reaction of the patient. If there is discomfort, shorter sittings and lower temperatures are in order; both may be increased as the tolerance of the patient permits.

The proper selection of cases for this treatment is of the greatest importance. Just because it produces intense effects, diathermy may, if used injudiciously, cause a great deal of harm. For this reason acute infections which are about to calm down must be rigidly excluded lest the inflammation flare up again. But even in subacute and early chronic stages, care is needed, and one can only agree with Guthmann,[4] who insists on keeping the patient under very strict observation. If the condition should become ever so little worse or even if there should be a slight rise in temperature, the treatments should be interrupted tempo-

Fig. 2.—Use of rectal electrode, showing radiation of heat to cervix.

rarily and resumed only with considerable caution. It must also be remembered that the diathermic hyperemia frequently causes an increase and prolongation of the menstrual flow, and it is therefore advisable to discontinue the treatment from two or three days prior to menstruation until a few days after its cessation.

1. Pemberton, Ralph; and Crouter, Caroline Y.: The Response to the Therapeutic Application of External Heat, J. A. M. A. **80**: 289 (Feb. 3) 1923.
2. Dittmer: Inaug. Diss., Kiel, 1921.
3. Lindemann: München. med. Wchnschr., 1915 and 1917.
4. Guthmann: Biologie und Pathologie des Weibes, edited by Halban and Seitz **2**: 545, 1924.

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The use of diathermy does not relieve one of the self-evident necessity of making an exact diagnosis. It should be ascertained that the patient is not pregnant, for an intensive penetration of heat might conceivably lead to abortion. Failure to recognize an ectopic gestation before commencing the treatment may well have disastrous consequences. Then, too, it must be borne in mind that diathermy exerts a marked influence on blood pressure and pulse, and for this reason only those patients should be subjected to this treatment whose cardiac system is intact.

Only an uncritical enthusiasm can regard diathermy as a panacea. There is no cure-all and there never will be. The advent of diathermy has not rendered older methods of treatment obsolete, and the best results will be accomplished by him who combines this new therapy with other tried means by which the defensive apparatus of the body is stimulated to energetic action. I have in mind such methods as protein therapy, the use of glycerin tampons, pressure-weight treatment and gymnastics. The physician who employs diathermy should bear in mind that he has a great responsibility. Not only is the procedure capable of producing harm, but its exclusive and injudicious use may quickly bring into discredit a method which has the faculty of restoring many sick women to health.

DIATHERMY IN GONORRHEA

The difficulty of curing gonorrhea in the female lies in the fact that the gonococci find in the para-urethral ducts of Skene and in the depth of the cervical mucosa a safe refuge from which they cannot easily be dislodged. Even after the stormy symptoms of gonorrheal infection have subsided and the cocci have disappeared from the discharges under appropriate treatment, recurrences may happen when the germs sally forth from their hiding places as the result of sexual or alcoholic excesses, lowering of the general body resistance from chilling or intercurrent diseases, or menstrual hyperemia. It is therefore necessary in every case of gonorrhea to treat the ducts of Skene and the cervical mucosa separately. How difficult this is and how often unsatisfactory need not be emphasized for those with practical experience. The destruction of the gonococci in these poorly accessible depots opens a promising field for diathermy. The results obtained are explained by the fact that gonococci are highly susceptible to heat and, in the test tube, are killed at a temperature of 108 F. In the living, the degree of heat must be considerably higher because the organism is always intent on maintaining a medium and constant temperature in all organs, and as soon as the temperature rises in any one place fresh cooling blood is dispatched to the heated zone to prevent accumulation of heat and consequent burn. For this reason, previous attempts at destroying gonococci by heat through hot baths or other hot applications have failed. By diathermy, on the other hand, a temperature of about 115 F. can be maintained for some time, and this suffices to kill the bacteria in most instances.

The technic is so well described and depicted by Corbus and O'Conor [5] that I cannot do better than refer the reader to their book. My personal experience is limited to two cases which had resisted all therapeutic efforts but were promptly and permanently cured by urethral and intracervical diathermy. Corbus and O'Conor record forty-eight cases in which treatment with diathermy was continued to a complete cure of the urethral infection, and in only three was it necessary to treat the urethra more than three times. In cervical gonorrhea these authors have, by intracervical diathermy, succeeded in eliminating the gonococcus completely and permanently in many cases. Twenty-four women were observed repeatedly for three years, thirty-eight for a period of two years. The technic is considerably more difficult than in general pelvic infections, but it is well worth the effort because it means a great advance in the treatment of gonorrhea.

DIATHERMY IN NONINFECTIOUS GYNECOLOGIC CONDITIONS

Lack of personal experience prevents me from speaking in detail on the diathermic treatment of noninfectious gynecologic conditions. From a study of the literature, however, I infer that in some cases of dysmenorrhea highly satisfactory results have been obtained.[5] According to Theilhaber, cases of amenorrhea due to hypoplasia are likewise suited for diathermy because this leads to improvement in blood supply and consequent improvement in nutrition and growth. Heat penetration has also been used successfully to stimulate the function of the breasts after childbirth, and Guthmann [4] vouches for the subsequent improvement in lactation. The same author further calls attention to the relief which is often obtained by diathermy in the treatment of painful bladder irritation of a chronic nature.

Purely theoretically, it seems to me that diathermy should be very promising in the treatment of chronic subinvolution. I have obtained such striking results with the consistent use of much milder degrees of heat in the form of protracted hot douches that I am merely waiting for the opportunity to try diathermy in these cases.

DIATHERMY IN CANCER OF THE UTERUS

Cancer cells exhibit a paradoxical reaction to injuries of any kind. These pathologic cells, which themselves are high destructive, are in turn destroyed much more quickly than are normal cells by mechanical, chemical, thermal and other stimuli. A cauliflower growth of the cervix uteri, for instance, is readily injured by the pressure of hard stools in the rectum, by the insertion of a douche nozzle or in intercourse, and then offers no resistance whatever to the inroads of bacteria. Still more marked is the lowered vitality of cancer cells when they are subjected to heat. Corbus and O'Conor [6] point out that malignant cells are destroyed by exposure for ten minutes to a temperature of 113 F., whereas normal tissue cells survive temperatures of from 132 to 140.

It is this fact which underlies the "surgical" application of diathermy, wherein heat beyond the physiologic tolerance of even normal cells is created in the tissues. The most practical method, according to the literature, seems to be that of electrocoagulation, by which the treated tissues are very slowly heated until they have become white from coagulation. The heat penetration, therefore, extends far more deeply into the tissues than if fulguration, the hot iron or the electrocautery were used, for with these agents the surface is quickly carbonized, and the resulting eschar acts as a barrier to further heat dissemination.

In electrocoagulation, too, as with other forms of diathermy, a combination with other methods seems

5. Corbus, B. C., and O'Conor, V. J.: Diathermy in the Treatment of Genito-Urinary Diseases, with Especial Reference to Cancer, St. Paul, the Bruce Publishing Company, 1925.

6. Corbus and O'Conor, p. 127.

highly advantageous. Recently, Curtis [7] stated that he had employed electrocoagulation together with radium for the past three years, and that the number of apparent cures in moderately extensive cases had greatly increased.

SUMMARY

It may therefore be said that in the realm of gynecology the application of high degrees of heat by means of diathermy has led to the development of several important and promising methods of treatment of various pathologic conditions. For the present, practical experience has been accumulated in the therapy of chronic pelvic inflammations, gonorrheal infection of the urethra and cervix, cancer of the uterus, and several minor gynecologic ailments. The pleasing results should not, however, obscure the fact that the new method is only in its infancy, and that a great deal of further careful clinical observation is needed to establish the possibilities and limitations of this new approach. Just because heat of such intensity is a powerful curative agent, it is also capable of causing considerable harm, and it behooves gynecologists to wield it cautiously and judiciously.

Metropolitan Building.

A GOITER SURVEY AT NORTHWESTERN UNIVERSITY

FIRST REPORT *

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In the present study the incidence and type of goiter, the previous medication, the clinical symptoms, the basal metabolic rates, and a possible relationship of the foregoing to the academic standing, were observed in 635 undergraduate women at Northwestern University, during the school year 1926-1927.

METHOD

A method similar to that used by the Swiss goiter committee [1] was adopted, with additional stress laid on the effect of medication and on the basal metabolism determinations. The accompanying illustration of the filing card used (fig. 1) shows the method of taking records, the reverse side (a part of which is shown in figure 2) being reserved for observations on treatment. A Roth-Collins metabolism apparatus with a kymograph was used.[2]

In measuring the thyroid gland, the symbols designated by the Swiss goiter commission for recording the measurements were followed: 0 indicates a nonpalpable gland with the trachea palpable from the thyroid cartilage to the sternum; 1, a gland hardly palpable behind the sternocleidomastoid muscle, with the trachea covered with some resilient tissue in the jugular fossa; 2, a gland easily palpable, both the superior and inferior lobes, but with the contour of the neck unchanged; 3, a gland filling out the contours of the neck, and with the neck full; 4, a definite swelling of the gland, or a visible goiter. The presence of nodules in the glandular tissue was designated by the letter N. Palpation of the gland was made from behind, the two thumbs being placed on the seventh cervical spinous process and the second and third fingers palpating the poles. The inferior pole was located while the patient swallowed. If the gland extended below the clavicle, attempts were made to elicit parasternal dulness, or if necessary a roentgenogram was taken of the chest.

TABLE 1.—*Incidence of Previous Treatment in a Group of One Hundred and Sixty-Eight Women with Thyroid Enlargement*

Method of Treatment	Percentage
Physical methods	2.4
Thyroid gland	2.4
Iodine	43.4
No treatment	51.8

The height of the lobes was measured from the superior to the inferior pole, or, if the latter was not palpable, from the superior pole to the clavicle. The maximal anteroposterior diameter was measured with a caliper from the seventh cervical spinous process to the most prominent point on the anterior aspect of the neck. The "size" of the gland was recorded as the distance between two lateral points determined by the intersection of the posterior border of the sternocleidomastoid muscle and the external jugular vein. It is the same landmark used in blocking the superficial cervical nerves in thyroidectomy. The maximal circumference of the neck was taken with a tape measure, passing through the seventh cervical spinous process posteriorly and the most prominent point anteriorly. All measurements were recorded in the metric system and have comparative value only for the same person, expressing the result of treatment or spontaneous fluctuation. They have no absolute value in comparing one gland with another. The surface of the gland was described as smooth or nodular, and the consistency as soft or firm. A smooth, soft gland was considered a simple colloid type, the degree of softness probably being proportional to the amount of colloid.

INCIDENCE OF GOITER

Of 635 women students examined, 168, or 26.5 per cent, showed clinical evidence of thyroid enlargement, belonging to groups 3 and 4 of the classification given. All further studies were carried out on this group. Of these, 83 per cent came from the Great Lakes district.

TABLE 2.—*Basal Metabolism Rates in a Group of Seventy-One Women*

	Rates	Percentage
Normal	(−10% to +10%)	81.6
Low	(Below −10%)	15.4
High	(Above +10%)	2.8

TYPE OF GOITER

A soft, resilient, nonpulsating gland with a smooth surface, i. e., a diffuse colloid goiter, was noted on palpation in 162 out of the 168 women. This type is typical of the endemic goiters in this district and similar to the Norwegian and Viennese endemic goiters, whereas the Swiss endemic goiter is predominantly nodular. Two women had nodular, nontoxic goiters,

7. Curtis, A. H., in discussion on Cancer, J. A. M. A. **87**: 1819 (Nov. 27) 1926.

* From the Surgical Department and the Student Health Service, Northwestern University.

1. de Quervain, F.: Le goitre, Edition Atar, Geneva, 1925.

2. We are indebted to Dr. M. H. Pope, and the Misses E. B. Kridler, R.N., H. Nelson, R.N., and F. Durham, R.N., for their cooperation. The nurses received a course of instruction from Miss M. Schilling, B.S., of the metabolic laboratory of the Wesley Memorial Hospital.

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and two had firm, pulsating, diffusely enlarged glands with other signs of hyperactivity. No one of this series came to operation, and therefore histologic diagnoses cannot be given.

The previous treatment in these cases is shown in table 1. The percentage of women between the ages of 16 and 20 who had taken iodine in any form was very high. It was impossible to ascertain the total amount, the dose or the form. Iodized salt was very popular. According to the statements obtained, a temporary decrease in the size of the gland often resulted from iodine therapy, but in not one instance was there permanent reduction. Chiropractic treatments were noted in two instances, and electric treatment and quartz lamp irradiations in one each.

NORTHWESTERN UNIVERSITY GOITER SURVEY

Name of Student F. M. Sch.
Birthplace Milwaukee, Wisconsin
Home Residence Milwaukee, Wisconsin
Previous Residence and Dates Always in Milwaukee
Previous Treatment for Goiter Iodine pills t.i.d. continuously since March 1925
Other members of the family afflicted with Goiter Mother

Date of Examination	Age	Weight	Pulse	B M R	Thyroid Gland*	Remarks
11-23-26	19	116	104	+21%	3	Less pressure now than year ago. Short of breath after exercise.
1-24-27		114	88	+30%	3	Less nervous than a year ago.

* On the basis of: 0—gland not palpable 1—gland hardly palpable 2—gland well palpable but not visible 3—full neck 4—definite goiter. Add M to number if gland is nodular.

MEASUREMENTS OF THE THYROID GLAND

Date	Height of Lobes R. L.	Size of Gland	Surface	Maximal Anteroposterior diam.	Maximal circumference of neck	Consistency
11-23-26	9.5 cm	3	Smooth	10	34	Firm
1-24-27	8.5 cm	3	Smooth	10	34.5	Firm, pulsating

Fig. 1.—Filing card used for recording observations in cases of goiter.

METABOLIC RATES

Satisfactory basal metabolic rates were not obtained in all members of this group, fifty-one women definitely refusing to take the test and others not returning for a recheck. In a group of seventy-one women, it was possible to obtain at least two satisfactory readings, some of them being tested as many as four and five times. The incidence of normal, low and high rates is shown in table 2.

In this group of seventy-one women, a definite goiter, or size 4 gland, was found in twenty-three (32.2 per cent), and of these eighteen (78 per cent) had normal metabolic rates. Size 3 glands were found in forty-eight women (67.8 per cent), and of these forty, or only 83 per cent, had normal rates, thus indicating that the absence of goiter did not make the metabolism readings superfluous

RELATION OF METABOLIC RATES TO ACADEMIC STANDING

The College of Liberal Arts and Schools of Music and Speech furnished us with the final grades of their students, given on a basis of 3 for excellent work, 2 for good, 1 for fair, 0 for barely passing, and — 1 for failure. The correlation of these with the metabolism rates is shown in table 3.

There does not seem to be any significant difference in the average grades between the women with low and those with normal rates, although the grade of the only graduate student, R. S. A., with a metabolic rate of — 20 per cent and a weight of 236 pounds (107 Kg.) was 2.5, thereby considerably raising the average grade of the group with low metabolic rates. Further, the difference between these groups was lessened during the year by raising the low rates by thyroid feeding. The two women whose condition was diagnosed as hyperthyroidism because of persistent elevated rates for which all other causative factors had been excluded had grades of 0.73 and 1.00, respectively, which were well below the average. Students in both the groups with normal and with low metabolic rates showed lower averages when the size of the gland was large. Whether this was a coincidence in this comparatively small group of cases it is impossible to say.

COMMENT

The prevalence of goiter in the Great Lakes district has been emphasized frequently since the work of Marine and Kimball with school children in Ohio, and has been followed by a general and at times indiscriminate use of iodine. Their advocacy of iodine prophylaxis between the ages of 10 and 16 has been adopted in many places and has led to astonishing results in reducing the incidence of endemic goiter. The introduction by Plummer of compound solution of iodine for the short preoperative management of hyperthyroidism has proved of great value to the surgeon, but its wide use as a form of prolonged treatment of thyrotoxicosis has been severely criticized. In a wave of enthusiasm iodine, including iodized salts and salves, is used indiscriminately by persons of all ages for all forms of goiter.

In the history of medicine the widespread use of iodine has occurred many times. Swiss physicians, in the middle of the last century, treated goiter with iodine extensively. A form of "chronic constitutional iodism" developed so frequently that Rilliet,[3] in 1860, published a book of warning on this subject. In 1900, Breuer [4] of Nothnagel's clinic gave a classic description of what he termed "iodine Basedow." Since then a large number of cases of hyperthyroidism induced by iodine have been reported, including those observed in goiter clinics in this country and in Switzerland.

Date	Weight	Pulse	B M R	Treatment
12-4-26	115	78-84	+21%	No exercise. Check rate
1-24-27	112	88	+30%	Family advised of surgical indication.
2-3-27	112	78	+11%	?
2-3-27	112	78-80	+17%	Still refuses surgery.

Fig. 2.—Method of recording observations as to treatment on back of filing card, one end of which is shown here.

From the material presented in this study, the overwhelming iodine medication in a group of college women is evident. While no objection can be made to small doses of from 10 to 20 mg. of iodine weekly for girls under 16, there is danger of inducing toxic symptoms in later years, not only in nodular forms of goiter, as emphasized by Plummer, but also in diffuse colloid

3. Rilliet, F.: Mémoire sur l'iodisme constitutionel, Paris, 1860.
4. Breuer, F.: Beitrag zur Aetiologie der Basedow'schen Krankheit und des Thyroidismus, Wien. klin. Wchnschr. **13**: 641, 671, 1900.

goiters, as shown by de Quervain. One of the patients included in this report, whose filing card is shown in figures 1 and 2, had a soft diffuse colloid goiter, came from a goitrous mother, and lived in a goitrous district. She had been a healthy, normal child and had had, as far as can be judged from the history, a simple endemic goiter. After having taken iodine pills three times a day for almost two years, she presented on examination a firm, pulsating goiter of diminishing size, and a high metabolic rate. Stopping all medication seemed to benefit her, but it is too early to say whether permanent harm has not been done. In the second case the hyperthyroidism did not seem to have any relation to iodine medication. In view of the danger of induced iodine hyperthyroidism, as illustrated by this group, in which 43.4 per cent had had iodine medication, it is deplorable that iodine should be used so freely in treating any thyroid enlargement in women 16 years or older.

The percentage of low rates (15.4) among college girls with all degrees of glandular enlargement is quite surprising. Cautious thyroid medication, checked with measurements of the gland, pulse, weight and basal metabolic rate, was instituted.

TABLE 3.—*Correlation of Goiter, Metabolic Rate, and Academic Grade in a Group of Seventy-One Women*

Size of Thyroid Gland	Number of Women: Total	Grouped According to Metabolic Rate		Average Grade
4	23	Normal	18	1.29
		Low	3	1.33
		High	2	0.86
3	48	Normal	40	1.49
		Low	8	1.48
		High	0	....

The correlation of academic grades with metabolism readings must be interpreted with great caution. So many other factors interfere with the figures that, unless much larger numbers of cases are available, conclusions cannot be drawn. We intend taking small groups of students, particularly from the School of Music, working under as nearly similar conditions as possible, and making repeated observations on them.

SUMMARY

With the method outlined by the Swiss goiter commission, the incidence, size and functional activity of goiter among the women at Northwestern University was studied.

In 635 women, a thyroid enlargement was found in 26.5 per cent, the dominating type being the diffuse colloid goiter.

The percentage of women in a group of 168 above the age of 16 with some thyroid enlargement who had taken iodine was found to be 43.4.

Metabolic readings in a group of seventy-one women with thyroid enlargement showed low rates in 15.4 per cent and high rates in 2.8 per cent.

A definite goiter was found in 32.2 per cent. In the absence of definite goiter, 17 per cent had abnormal metabolic rates.

A correlation of academic standing with metabolic rates showed that two women with high rates had low grades. No marked difference in academic standing was found between women with normal and with low rates.

122 South Michigan Avenue.

METALS IN OUR FOOD

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The question as to what part the metals commonly present in our natural food play in the vital economy of the human organism and whether the small quantities of various metals dissolved from utensils during the cooking process react in different ways is of paramount importance. It is an interesting observation that copper, zinc, manganese, iron and aluminum are to be found in our plant and sea foods in appreciable quantities; that traces of nickel and cobalt are often detected, though only in certain plants, while lead, a recognized toxicant, is practically unknown except when the waters have been contaminated by some industrial plant. Certain observers, notably McHargue,[1] have endeavored to associate zinc, manganese and copper with the vitamins because of their effect in increasing plant growth. Just how these metals function is still a question, although it would seem most probable that they function as catalytic agents. The oligodynamic action of the metals was recognized by Naegeli[2] in tap water, and he observed that if such insoluble substances as paper, wool or gum were added to the water it was deprived of its toxic properties to minute organisms. The most reasonable explanation of this phenomenon is that the metals, being present as hydroxide or carbonate in colloidal form, are electropositive and are attracted by the electronegative surfaces of the material used by Naegeli to remove the toxic effect of the water. This finding is important in considering our subject.

The metals commonly used in the manufacture of cooking utensils are iron, copper, tin, aluminum and nickel. Zinc is unavailable because of the readiness with which it is acted on by weak acids, and cases of acute poisoning have been reported from the ingestion of food permitted to stand in galvanized utensils. The other metals have advantages and disadvantages because of their solubility in different solutions and the difficulty of keeping them in a sanitary condition. Tin seems to be the most innocuous, but because of its cost, and the wearing away of the tinned surface which leaves the underlying metal exposed, it is not practical in the ordinary kitchen. Copper, aluminum and nickel are all acted on to some extent by the alkalis or acids contained in the food, the amount dissolved depending roughly on the acidity or alkalinity of the food being cooked. Aluminum is only slightly attacked by organic acids but in the presence of sodium chloride the reaction is greatly accelerated. Hydrochloric acid is the best acid solvent for this metal but is not found in our foods. Aluminum is readily acted on by alkali.

The question, then, is, Do these dissolved metals in our food produce chronic poisoning over a long period of exposure? In our work we have endeavored to keep our animals under observation for longer periods than have commonly been reported in the literature. If these metals do have a harmful effect, it cannot be detected after a few months' exposure and may make its appearance in the kidney, liver or nerve lesions after a long time. It is of importance to note that industrial surveys have so far failed to detect any industrial disease that is specific to the copper, tin or aluminum industries.

1. McHargue, J. S.: Am. J. Physiol. **77**: 245 (July) 1926.
2. Naegeli in Bayliss, Principles of General Physiology.

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The only cases of nickel poisoning reported in the industry come from exposure to nickel carbonyl, a compound of nickel and carbon monoxide. According to Armit,[3] this compound breaks down in the lungs, and the finely divided nickel is absorbed by the body fluids and produces pathologic lesions.

It is unscientific to draw conclusions as to the toxic effect of a metal from observations made in experiments in which the metal or its salts have been injected intravenously or subcutaneously, and to assume that the same results may be expected when the metal has been ingested with food. Nor are we faced with the problem of absorption through the respiratory tract, the main method of ingress and intoxication in industrial exposures. We have noted that the various salts of copper, for instance, react differently with portions of the same blood in vitro, and that an amino-acid compound does not precipitate out proteins. We have found that the metal salts combine with the proteins to a great extent at the point of injection. And we have repeatedly had our attention called to the neutralizing effect of food in preventing lead intoxication.

The evidence that food ingested with metals reduces if not altogether modifies the effect of the metal must be considered in any discussion of the effect of metals on the human system. In our work with metals, we have learned that quantities that cannot be tolerated by animals if taken in single doses are readily ingested if given in the drinking water or sprinkled over the food eaten throughout the day, and without any discomfort to or ill effect on the animals. Furthermore, the doses may be greatly increased, the only precaution being that the drinking water or food must not contain enough of the salts of the metals to give them a metallic taste. Food having a metallic taste is unpalatable and causes a disturbance in the digestive tract. In part of our experimental work, we fed guinea-pigs copper and nickel in capsules, and we were never able to get the animals to take more than 0.2 mg. of copper or 0.1 mg. of nickel as chlorides in single doses without considerable trouble. On the other hand, there was no difficulty in getting the pigs to take 20 mg. of the same salt of copper if it was mixed with the food eaten during the day. Our rabbits died within twenty-four to thirty-six hours when 30 mg. of copper as chloride was given in solution by means of a stomach tube, and yet others lived, increased in weight and did not show any ill effect when they ingested 100 mg. each day with their food over a period of months. We did not experience the same trouble with tin, aluminum and zinc, although zinc has been used as an emetic in the same way as copper, and aluminum salts are astringent in their action. We had no difficulty in getting the pigs to take 2 mg. of these metals as chloride in single doses. We wish to state, however, that in making these observations we were not endeavoring at any time to find the maximum dose an animal could be forced to take, these observations being made during our routine work.

The therapeutic dose of copper sulphate when it is used as an emetic is 250 mg. All of the metal salts have an irritating effect when injected into the intestinal tract of an anesthetized cat that has been starved for twenty-four hours. It is the emetic property of copper which is responsible for the reported cases of acute copper poisoning and which prevents its use for criminal purposes. Relatively large amounts of copper salts in single doses taken by mouth will cause violent vomiting in a few minutes and will likewise injure the mucous membrane, producing pathologic lesions. Our observations show that the salts in these amounts and under the condition of starvation or absence of food corrode the walls of the stomach and intestine; the animals suffer from cramps as a result of a contraction of the smooth muscle, and blood can be detected in the vomited material and stools. If the animal dies it is apparently from exhaustion. Zinc and nickel salts produce similar results.

It is because copper, zinc and nickel are so readily soluble in the acids of fruit that it is inadvisable to recommend their use indiscriminately in vessels for cooking purposes. If the utensils are not kept scrupulously clean, salts of the metals form on the surfaces and these salts are more soluble than the metals themselves. Verdigris on copper, dark nickel stains and the brightening of aluminum ware are all indications of this. The action of vegetables is comparatively slight as compared with that of fruit juices, but it is more powerful than one would suspect. We suggest that because of this solvent power it is unwise to let food stand for too long a period in metallic vessels as the amount of metal dissolved depends on the strength of acid or alkali present and the length of exposure. On the other hand, we do not have any indication of any chronic poisoning from any of the metals that we are discussing.

All vegetables have the ability to combine with the metals under discussion when placed in a solution containing their salts. The compound thus formed is not dissolved or leached out by water. The amounts which combine with the food pulp seem to depend on the p_H of the solution. This is what takes place when the food is cooked in these utensils. The question arises, What is the effect of the digestive juices on the compounds of metals and the proteins of the food? Our experiments indicate that during the process of digestion the metal is broken off in some organic combination, probably as some dipeptide or amino-acid salt. The amount of metal that is split off in this form depends entirely on the p_H of the stomach—the higher the acidity, the greater is the amount of metallic compound split off. If the protein compound is digested with a 1 per cent sodium carbonate solution at body temperature, one finds that the entire mass goes into solution. If hydrochloric acid is then added, a protein precipitate is obtained that does not contain any of the metal which on filtering is found to be present in the filtrate. That the metal is not present in combination with inorganic acid is indicated by the fact that those metals that are precipitated out by hydrogen sulphide do not react with this reagent in the filtrate. On the contrary, the solution remains colorless. The question arises, How much of the metal is split off during digestion and how much passes through the gastro-intestinal tract unabsorbed and is eliminated with the roughage of the vegetables? It is certain that with the exception of zinc and to a certain extent aluminum, most of the metal passes out in the feces; but whether unabsorbed by the body or filtered out of the blood by the liver it is hard to say.

Our experiments with cellulose membranes so graded by the Pierce[4] method as to permit the passage of hemoglobin show that some of the soluble metal compound is dialyzed, indicating that metals might possibly be absorbed through the intestinal membranes. We have confirmed these deductions by injecting the solu-

3. Armit, H. W.: J. Hyg., July, 1907.

4. Pierce, H. F.: J. Biol. Chem. **75**: 795 (Dec.) 1927.

tion into the intestinal tract of an anesthetized cat and recovering part of the metal in the blood. Drummond,[5] from experiments on dogs with Pavlov gastric fistulas, came to the conclusion that less than 0.5 per cent of the metal present in the colored vegetable that had been digested in the stomach can be dialyzed through collodian thimbles after removal from the stomach. We have further proof of absorption in our study on the distribution of metals in the body. These observations, deduced from our animal experiments, all indicate that a normal, well nourished individual will absorb part of the ingested metal but will not suffer any ill effect from these small amounts. The danger, if any, lies in possible hyperacidity. This is indicated by experiments that we have conducted with vegetables in vitro; as the acidity increases, the greater is the amount of metal split off. It may be that this is one of the factors in idiosyncrasy toward metallic poisoning. Evidence is accumulating tending to show that a person who has an idiosyncrasy toward one metal has it for others, and that it is not specific.

Zinc, copper, manganese, aluminum and tin are found in the human body in varying quantities, being absorbed with food. Of nickel, there are only traces. Aluminum, tin and nickel apparently do not have any function in the body but, on the other hand, there is much speculation as to whether zinc, copper and manganese may not play a part in the metabolic process of the body in the same way that iodine does. Their common occurrence in practically all our foods may well account for the constant observations in the human body, and the body during the evolutionary period may have developed a resistance to their toxic properties or have learned how to eliminate them with the least possible harm to the system as a whole.

In our study of the effect of various metals, we have made use of the rabbit, albino rat and guinea-pig, and for certain observations the dog and goat. Working with several species permits one to draw more general conclusions. We have kept our animals in a well nourished condition by feeding them good and varied food. We have not subjected them except in special experiments to doses that do not occur normally. It is wrong to draw conclusions as to the effect of a hazard by giving an animal more than the organism can handle or more than exists in the exposure being studied. Many of our rats were under observation for more than eighteen months. We feel that the albino rat is an ideal animal for this type of work because it is omniverous, its span of life is relatively short (three years) and a large number of animals can be kept at a time, thus lessening individual errors in observation. The rabbit unfortunately has many of the lesions normally that have been reported by some experimenters as being the result of exposures. This fact cannot be too strongly impressed on every investigator.

In studying the toxic effect of any material, one must consider how and where such material is stored in the body, what pathologic manifestations are observed, and the manner of elimination. For the purpose of studying the excretion rate of metals, we used the rat in a specially constructed cage which permitted the immediate separation of the feces from the urine and thus avoided any leaching of the stools. It was so arranged that the food and water could not contaminate the excreta. The metallic salts were given in the drinking water in a graduated tube so designed as to avoid any spillage and to get the minimum evaporation. A daily record was kept of the amount of water drunk by readings from the tube, so that we were able to know within a very high degree of accuracy just how much metal was ingested during the experiment and how much was eliminated in the urine and feces. The animals were killed at the end of the experiment and the metal contents determined in the body after the removal of the intestinal tract. The animals were receiving on the average 2 mg. of metal a day. We used ten rats for each of the following metals: copper, tin, nickel, zinc and aluminum. A summary of our results shows that between 98.5 and 99 per cent of the copper, tin and nickel is excreted in the feces; 70 per cent of the aluminum is excreted in the feces and 30 per cent in the urine; while zinc is practically divided between the feces and the urine. We did not find any great accumulation of the metals in the bodies—generally less than a milligram in the whole body of the rat after three months' exposure except in the case of zinc and aluminum. It is also interesting to observe that, with the exception of nickel, all 1 day old offspring of the animals showed the presence of the metal to which the mother had been exposed. The records do not indicate any ill effect on the young of animals ingesting these metals.

To determine how the metal was distributed in the various organs of the body, we kept groups of ten rats on the amount of metal mentioned in the excretion test for one year. The rats when they started to ingest the metal weighed 75 Gm. and at the end of a year when they were killed the weight had increased to about 200 Gm., thus duplicating the growth curve of the control group. The organs of the rats were analyzed in groups of five so as to reduce the error in analysis. Our results are summarized in the accompanying table.

Results of Ingestion of Metals by Rats

	Aluminum	Copper	Nickel	Tin	Zinc
Brain	0.21 mg.	0.05	Trace	0.017	0.57
Bones (100 Gm.)	10.80	0.46	Trace	4.80	25.50
Hair (100 Gm.)	3.13	2.40	Trace	0.25	2.50
Heart	0.11	0.012	Trace	0.035	1.42
Kidney	0.24	0.10	Trace	0.04	0.67
Liver	0.14	0.74	Trace	0.063	0.72
Lungs	0.067	0.005	Trace	0.025	0.032
Muscle (100 Gm.)	1.07	0.16	Trace	0.025	12.62
Spleen	0.32	0.01	Trace	0.05	1.92

These figures give the contents of the organs of one rat, being the average of ten animals.

The results of nickel ingestion are perplexing, as the excretion test showed that part of the metal was being absorbed and yet we found only traces in any of the organs. It has been shown by some investigators that nickel has an action on the heart and nerve tissue. Nickel has been reported as being present in the oblongata after exposure. When very large doses are given it can be found in the organs, but it is interesting to note that we could detect only traces under the conditions of our experiment.

Because of Aub's recent work with lead and the emphasis he has placed on phosphates, one should remember that all of the metals under discussion form an insoluble phosphate compound under much the same conditions of p_H. Whether the metals including lead are carried as a phosphate in the blood in colloidal form is a matter of conjecture from experiments carried out in vitro. Amino-acid salts of the metals do not precipitate protein as the inorganic and some of the organic salts do.

5. Drummond, J. C.: The Analyst, October, 1925.

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Because of our work with metals, we have been asked many times during the past year whether we thought aluminum cooking vessels had any effect on the health. These inquiries have been brought about by published discussions of the subject, many of which are unscientific and unsupported by facts. Without projecting ourselves into the "alum" discussion, we must admit that our observations do not confirm some of the published statements. They do not indicate that aluminum affects the procreative organs in any way, or perhaps, to be more exact, the germ cell, as is the case with lead. We think that studies of the effect of metals on the offspring should be repeated in view of our more recent knowledge of vitamin E. We are familiar with lead anemia, but the examination of the blood of animals exposed to copper, nickel, zinc, tin and aluminum does not show any anemia nor does an examination of their organs indicate any abnormal destruction of blood cells. There was no evidence in our work that aluminum had replaced iron in the blood or liver. For the purpose of causing some pathologic effect on the liver, such as has been described by Mallory,[6] we fed different rabbits 320 mg. of copper, 540 mg. of zinc and 150 mg. of aluminum, and after months of exposure could not detect a sign of excess blood destruction. Mallory asserted that anything that would cause hemolysis would cause hemochromatosis.

The metals combine with both the white and the red cells of the blood to some extent, and it may be that they do destroy some function of the cells. Our work has not progressed far enough as yet to permit us to make a statement, but our impression from our work with animals is growing continually stronger that exposure to all the metals reduces man's resistance to disease. Tin seems to have less effect in this way than the other metals.

We have no evidence so far that during the cooking process one metal destroys the vitamin more readily than another. Any destruction by the metals that may take place is probably due to the well known catalytic properties of the minute quantities dissolved. We are very much interested in the effect that metals have on the calcium-phosphate metabolism in the body and think that some of the ill effects ascribed to the metals may be due to a disturbance of that ratio.

As was stated at the beginning of the paper, aluminum is not soluble ordinarily in organic acids but becomes so in the presence of sodium chloride. It may be that, if people would learn to cook without salt, the solution of aluminum during the cooking process would be lessened. It must be remembered, however, that all vegetables contain this salt, sodium chloride. Recently an effort has been made to get people to cook vegetables without the addition of water. This requires special utensils, because otherwise the food would burn. All the vegetables contain a large amount of water and soluble salts. For example, if turnips are boiled for three or four hours and the water is then pressed out, it is surprising how little solid food remains. We have obtained 3 pounds of pulp from 25 pounds of turnips treated in this way, this pulp still containing from 80 to 90 per cent of moisture. It is these soluble salts that attack the metals of cooking vessels and the loss of which may cause many nutritional diseases as a result of an upsetting of the mineral intake ratio.

In the cooking of food in the utensils without water there cannot be any leaching of metal and consequent possible ill effect from the metal. This is because the water in the vegetable, with the salts, remains inside the vegetable, this being sufficient to cook it, and contact with the metal is thus reduced.

A study of the growth curves, the blood and animal behavior and a pathologic examination of the tissues indicates that persons do not suffer any ill effects from the small amount of metals present in the food or dissolved from the cooking vessels. We have not found any indication of chronic poisoning from these metals involved, especially copper, which metal we were particularly interested in when we began our study. In spite of our negative observations we feel that there is room for further study to learn whether the metals have any part in causing or accelerating some of the degenerative diseases of middle age.

6. Mallory, F. B.: Am. J. Path. **1**: 117 (Jan.) 1925.

SUMMARY

Copper, zinc, manganese, iron, aluminum, nickel and cobalt are commonly found in plant and sea food. Lead, a recognized body toxicant, is not.

Copper, zinc, manganese, tin, iron and aluminum are generally present in the human body, but with the exception of iron do not have any known function in the vital economy of the organism.

Copper, nickel, tin and aluminum are practically all eliminated in the stools; the excretion of zinc is divided equally between the urine and the stools.

Metallic salts ingested with food combine with the proteins of the food and are rendered harmless except when the metallic salt is present in excessive amounts, or perhaps in cases of hyperacidity. All metallic salts ingested during the absence of food in the stomach have a deleterious effect.

Copper, nickel, zinc, tin and aluminum are all attacked by acids or alkalis during the cooking process, the amount dissolved depending roughly on the acidity or alkalinity of the food.

All food having a metallic taste from these dissolved metals are unpalatable and irritate the gastro-intestinal tract.

Animals will not ingest large amounts of copper and nickel salts in one dose. If the same amount is mixed with the food and fed throughout the day, the animal will ingest it without discomfort or ill effect. Animals can ingest relatively larger amounts of tin, zinc or aluminum salts in single doses.

Copper, zinc, aluminum and nickel are not classified as industrial poisons because of the absence of any evidence of chronic or acute poisoning in industrial plants. Nickel poisoning has been reported from nickel carbonyl.

There is no scientific evidence of any chronic poisoning taking place from food cooked in aluminum utensils. Large doses of aluminum salts, like copper and nickel, will cause gastro-intestinal disturbances when excessive amounts are dissolved.

Tin apparently does not affect the human system, but because of its cost its use in cooking utensils is prohibitive.

437 West Fifty-Ninth Street.

Morbid Anatomy.—It was a long time after the beginning of anatomy before physicians began to make any serious investigation of the abnormalities in structure resulting from disease, at least before morbid anatomy consisted of more than fragmentary observations. It was two hundred years from Vesalius to Morgagni. One may say that only then did physicians begin to be scientists in the modern sense.—Cole, Rufus: *Science* **67**:49 (Jan. 20) 1928.

THE DEVELOPMENT OF DEFICIENCY DISEASE DURING THERAPEUTIC DIETS

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The focus of attention on full blown pictures of deficiency disease resulting from actual economic deprivation or gross pathologic function of the individual is perhaps responsible for a general lack of recognition of less striking instances under more easily controlled circumstances. A particular disease is treated by the physician from the dietetic standpoint in accordance with the characteristic features of malfunction, whether these be abnormal alimentary (secretory and motor) activity or deranged carbohydrate, chloride or nitrogen metabolism. The overwhelming enthusiasm for controlling the obvious functional derangements has led to an ignoring of the maintenance of the patient on a diet containing the necessary accessory food factors. Such an attitude is perhaps justified by the facts that actual food deficiency disease of the types readily recognized occurs only after a long period of deprivation and that active dietotherapy is usually only temporary. This was my attitude in the management of patients suffering from digestive disturbances, particularly peptic ulcer, until the occurrence of the following two instances of deficiency disease of a relatively obscure and benign character in patients who were thought to be under absolute therapeutic control:

REPORT OF CASES

CASE 1.—An Englishwoman, aged 25, who was seen because of a most pernicious vomiting occurring about two and a half weeks after cholecystectomy, had failed to obtain any relief from all local and general measures, such as abstinence from food, the use of local anesthetics and general antispasmodics. She became progressively weaker and more dehydrated, but operation was decided against because the result of an appendectomy, noted at a subsequent gallbladder operation, showed a tendency toward the formation of adhesions. As a last resort, duodenal intubation was used with an almost immediate cessation of the untoward symptoms. She was fed transduodenally, by the use of the duodenal tube, for nine days, beginning on the sixth day to take food by mouth. Her progress was uneventful, but because she had been a "ready vomiter" since childhood, and because of the presence of presumably abundant adhesions, it was thought best to prescribe a diet with a very low roughage content and substances nonstimulating to gastric secretion, such as is commonly used in the ambulatory treatment of peptic ulcer. This diet excluded many of the vegetables and fruits. The patient's progress on this diet was satisfactory until about five weeks after the introduction of the tube (eight weeks after the cholecystectomy), when areas of the necrosis on the incisors and canines just above the gum margins were noted. The possibility that this was due to deficiency of some food factor, as has been described in experimental animals by Dr. Percy Howe, presented itself. The patient was seen by Dr. Howe in consultation, and he diagnosed the dental condition as due to a deficiency of antiscorbutic vitamins. Citrous fruits were added to the dietary and when the patient was seen a week later, no change was noted in what had appeared previously to be a rapidly destructive process. Twenty months have now elapsed and no further extension of the process has occurred.

CASE 2.—A woman, aged 22, of Russian Jewish stock, was seen because of intense pain under the left costal margin, vomiting and hematemesis. The supposition of gastric ulcer by her family physician was substantiated in his opinion by the roentgen-ray visualization of an ulcer on the posterior wall, and he placed her on a milk diet ten days before she was seen by me. As there was no obstruction and as the economic status of the patient did not demand an early return to work, a period of hospitalization for medical treatment was decided on. A modified Sippy regimen with antispasmodics was used, but the patient became nauseated and vomited frequently without any alleviation of the pain. After five days it was decided that transduodenal feeding was the wisest procedure, and this was resorted to. On the second day after the introduction of the tube, the patient, a most unruly and uncooperative person, pulled out the tube. It was decided then to try a period of starvation with rectal feedings; this was done for three days, at the end of which time the patient, a stout individual, showed a marked acetone breath and acetone in the urine. Another attempt at oral feeding was made at this time with the use of a Lenhartz diet, which in two days recalled all of the former symptoms; at this time bleeding, spongy gums were noted, which were thought to be manifestations of a deficiency disease. In view of the marked symptoms of ulcer and the bleeding gums, it was felt that some radical measure was necessary, either operation or another attempt at transduodenal feeding with the introduction through the duodenal tube of orange juice (because of its antiscorbutic vitamin content). The patient requested transduodenal feeding, which was again terminated at her insistence in two days. Operation was urged but the patient pleaded for another attempt at the Sippy regimen, which was granted. The juice of three oranges, made neutral to litmus by the addition of sodium bicarbonate, was added. The occurrence of the bleeding, spongy gums after this period of food restriction lasting twenty-seven days was interpreted as a manifestation of scurvy; the patient complained of pains in the joints but did not show evidences of scurvy elsewhere. The bleeding of the gums decreased very rapidly and on the sixteenth day after the administration of orange juice had disappeared.

This patient was seen by Dr. Hyman Morrison, who was much interested in the striking features presented. Subsequently Dr. Morrison saw a case which was even more striking because of more advanced manifestations than those in either of the cases I have seen. He very kindly offered me the data in this case:

CASE 3.—A Russian Jew, aged 36, was referred to Dr. Morrison by an orthopedic surgeon whom the patient had consulted because of pains behind the knees and purpuric spots over both thighs. The patient had been treated somewhat cursorily for a gastric ulcer during the preceding three years, and had been on a Sippy diet, which he had not followed very rigidly. His past history was insignificant except for migraine. Physical examination revealed malnutrition, prominent eyes, bleeding gums, fulness over left front of chest (unexplained), dry skin, perifolliculitis with purpura and ecchymosis over the inner aspect of the thighs, and induration in both groups of hamstrings. Dr. Morrison advised the patient to add two oranges and some vegetable purée to his diet; subsequently he informed Dr. Morrison that four days after this visit improvement set in and has been continuous.

COMMENT

The question of the ultimate efficacy of any diet that is deficient in the accessory food factors, regardless of how successful it is in combating the manifestations of the disease under treatment, must be carefully considered. In such conditions as peptic ulcer, in which the etiology is obscure and every effort must be made to improve the general metabolism, it is likely that a superimposed deficiency disease would be extremely detrimental. Indeed, peptic ulcer itself may possibly be looked on as an example of tissue destruction, like scurvy, secondary to vitamin deficiency. The necessity of watching carefully every patient under any dietary restriction for manifestations of avitaminosis, particularly those with digestive disturbances, cannot be overemphasized, both as a prophylactic measure against the development of this unpleasant complication and because of the possible deleterious effect of such an incidental condition on the disease under treatment.

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SUMMARY

1. Attention is often so directed toward the dietotherapy of the obvious pathologic condition that general laws of nutrition are ignored.

2. In three patients with digestive disease, during the course of "ulcer diets," manifestations of deficiency disease developed, as evidenced by dental caries, bleeding, spongy gums, purpura and intramuscular hematomas.

3. The necessity of adequate accessory food factors in special diets, as prophylactic against the development of a deficiency disease and the ensuing possibly detrimental effects on the lesion under treatment, must be emphasized.

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DIPHTHERITIC ENDOMETRITIS

REVIEW OF THE RECENT LITERATURE AND REPORT OF A NEW CASE

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Puerperal infection of the uterus with diphtheria bacilli is a complication of such rarity and the literature on the subject is so scarce that it seems worth while to report such a condition when found.

A review of the available literature yielded only three cases over a period of twenty years, although De Lee in a recent edition of his work reported a collection of forty cases of diphtheritic vaginitis. This would seem to indicate that true diphtheritic endometritis is a rare disease. It is likely, however, that many cases have been unrecognized, as those who have reported this infection agree that there are no outstanding signs or symptoms to differentiate it from other forms of puerperal infection, and that diagnosis can be made only by bacteriologic examination.

Diphtheritic vaginitis is more common and has been reported by a number of writers. Salman [1] reports the oldest case on record. This was in a woman confined in a state institution in which there was an epidemic of diphtheria. During a routine pelvic examination, two small patches were seen on the vulva. Cultures were taken from these and from the throat, and the Klebs-Loeffler bacillus was found in both. There were no clinical symptoms. A few days later similar patches appeared in the mouth, and the patient died in spite of the usual treatment with antitoxin. It is not known whether the infection extended up into the uterus.

Van Saun [2] reported twenty-six cases of diphtheritic vaginitis in children, collected from the literature of thirty years. In many of these the diagnosis was not confirmed by bacteriologic examination. No mention is made of infection of the uterus in any of these cases. Lundertz [3] reported primary diphtheria with postdiphtheritic paralyses producing difficulty in drinking and speaking, and bilateral ptosis and ataxia in a girl, aged 5½ years.

Lash [4] recently reported two interesting cases of diphtheria of the female genital tract. One was in a woman, aged 44, who entered the hospital, Sept. 26, 1924, with a diagnosis of influenza. The onset of the disease and the course of the symptoms were as follows: Abdominal cramps and bleeding from the vagina were noticed, September 22, after she had lifted a heavy pail of water. No relief was noticed, and four days later she entered the hospital and the same day passed several very large clots of blood. On the following day she felt quite ill, was nauseated, and had severe backache and headache. The temperature was 103; the pulse, 96, and the respirations, 24. There was a serosanguineous vaginal discharge of foul odor, and a greenish gray membrane lined the vagina and left bleeding points on being removed. The diphtheria bacillus was found in smears from both the vagina and the throat. The patient recovered and left the hospital fourteen days after the injection of antitoxin.

The second case reported by Lash in the same paper was in a primipara, aged 33. Dec. 29, 1923, she was delivered of a full term normal child. There was a small second degree laceration. Jan. 1, 1924, her temperature rose to 102.4 F. There was pain in the abdomen and great tenderness and rigidity in the lower left quadrant, and the uterus was firmly contracted. January 2, a membrane was noticed on the labia and a culture taken from this showed Klebs-Loeffler bacilli. The patient recovered without complications after antitoxin was given.

Lash does not state whether or not cultures were taken from the uterus. It is highly probable, however, that in both these cases the infection extended beyond the internal os, because of the pelvic pain and abdominal tenderness.

R. H. Beek [5] reports three cases of diphtheritic involvement of the genital tract in puerperal women, all confirmed by culture. He states that none of these patients appeared to be very ill. In only one was there a chill, and all three of them had a rise in temperature to about 102 F. with pulse rates between 110 and 115. All three had a membrane in the vagina from which cultures of the diphtheria bacillus were obtained, and in one case he states that the "membrane apparently extended into the cervix." In this case the uterus was very tender, as it was not in his other two cases, so it seems probable that the infection extended into the uterus.

In summarizing these cases, it is possible to sort out three cases of diphtheritic endometritis from thirty-three cases of genital diphtheria. Two of these were reported by Lash [4] and one by Beek.[5] In all three there was great tenderness in the lower part of the abdomen, cramps or other abdominal pain, and in one case hemorrhage. These symptoms were lacking in the cases of diphtheritic vaginitis.

In the case which came under my observation and which prompted me to review the literature, the diagnosis was not made until cultures were taken from the uterus after hysterectomy for severe hemorrhage, and no membrane was observed on the cervix or in the vagina, although the uterine cavity was filled with a thick grayish covering, difficult to remove.

REPORT OF CASE

Miss C., aged 21, was on the sixth day of recovery from an illegal abortion when about a pint of bright red blood gushed from the vagina. A second severe hemorrhage occurred a few hours later, this time accompanied by severe abdominal pain and tenderness. The pulse and temperature

1. Salman: Diphtheria of Vagina with Secondary Involvement of Mouth, Rectum and Skin, Am. Med. Philadelphia **7:** 391-394, 1904.
2. Van Saun, A. L.: Diphtheritic Vaginitis in Children, J. Infect. Dis. **33:** 124-129 (Aug.) 1923.
3. Lundertz: Primäre Vaginal und Haut Diphtherie mit post diphtherischen Lähmungen, Med. Klin. **16:** 151, 1920.
4. Lash, A. F.: Diphtheritic Vaginitis: Report of Two Cases, Surg. Gynec. Obst. **11:** 556-558 (April) 1925.
5. Beek, R. H.: Diphtheria of the Genital Tract in Puerperal Women, Journal-Lancet **44:** 38-40 (Jan.) 1924.

were normal. She was taken to the hospital, and a large piece of placenta was removed from the uterus. This organ was then firmly packed with iodoform gauze. On the following day there was a rise in temperature to 100 F.; an increase in the pulse rate to 120 (which was partly due, no doubt, to the hemorrhage), and an increase in the abdominal pain and tenderness. The red cell count was 3,250,000; the white cell count, 13,600; the hemoglobin 60 per cent, and the coagulation time, four minutes. The uterus could be palpated through the abdominal wall; it was very tender, soft and uncontracted and about the size of a grapefruit. Other pathologic manifestations were not found in the routine physical examination, except for a very large angioma extending from the tips of the fingers of the right hand over the entire length and circumference of the arm and a large portion of the shoulder and back as far as the median line. A routine examination of the throat did not disclose any inflammation or other form of pathologic change. The tonsils had not been removed.

Four days after the curettage the packing was removed. The following day moderate hemorrhage from the uterus was resumed. There was no other vaginal discharge and no odor. The uterus and vagina were repacked, but hemorrhage again occurred when the packing was removed after remaining in place two days.

During the next four weeks the uterus and vagina were packed repeatedly, sometimes twice daily. Hemorrhage occurred every time the packing was removed and sometimes there was bleeding through the packing. This was taken to mean that the source of the bleeding was in the cervix, but on examination no bleeding point was found. During this period of four weeks, two blood transfusions were given. At no time did there appear to be any improvement in the fever, the rapid pulse or the pain, and the uterus continued to be about the size of a grapefruit. Two blood cultures were taken and found to be sterile. Nevertheless, the case was diagnosed as puerperal fever and the usual treatment was given, including ergot and solution of pituitary by hypodermic syringe at frequent intervals. Five weeks after the patient's admission to the hospital, while the packing was being changed, a very alarming hemorrhage occurred which did not cease entirely even after the uterus and the vagina were tightly repacked with gauze. The red cell count dropped to 900,000. The hemoglobin was 20 per cent and the patient appeared to be in grave danger of death. After consultation it was decided that if a blood transfusion and intravenous injections of saline solution could bring her out of the condition of shock, a hysterectomy should be performed at once. This was done, after these preliminary preparations, under gas anesthesia.

The laboratory report on the gross specimen was postabortum infection and nonresolution of the decidua. A culture from the uterine cavity, taken after the uterus was removed, showed a luxuriant growth of diphtheria bacilli and streptococci. About 20,000 units of antitoxin was administered to the patient, and, in spite of her five weeks' illness, she made a rapid recovery and three weeks later left the hospital with the red cell count restored to 3,500,000 per cubic millimeter. There were no postdiphtheritic paralyses.

At no time during her illness did the patient show marked signs of toxicity, and at no time did she complain of the chills or the joint and muscle pains so common in ordinary diphtheria.

COMMENT

The origin of the infection in this case is unknown. A next door neighbor had had pharyngeal diphtheria for several weeks about three months prior to the abortion. The wife of this neighbor attended Miss C. following the abortion but denied being implicated in it.

A review of these cases suggests that while diphtheritic vaginitis is fairly easy to recognize and is fairly common, diphtheritic endometritis is difficult to recognize and is not common.

Infection of the genital tract with diphtheria produces less severe symptoms than diphtheria of the pharynx or larynx, and less severe symptoms than puerperal fever.

In two of the four cases here reviewed there was uterine hemorrhage, but in one of these, my own case, there was bacteriologic evidence of a mixed infection with diphtheria bacilli and streptococci.

Since diphtheria in the uterus as well as in the throat yields quickly to treatment with antitoxin, a culture of the uterine cavity should be made in cases of puerperal infection showing low fever and a marked disproportionate increase in the pulse rate.

STUDIES ON DIGITALIS IN AMBULATORY CARDIAC PATIENTS

I. THE USE OF DIGITALIS IN THE CARDIAC CLINIC *

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The production of the full effects of digitalis and the maintenance of these effects for long periods of time constitute two separate problems in the use of digitalis in heart disease. Factors in the use of digitalis that may be of little importance in the treatment of a patient with heart failure in bed under strict nursing supervision for periods of several days or several weeks become of the greatest importance in the treatment after recovery from the failure when the patient is up and about, working, with no one to administer or supervise the daily medication, for periods of from months to years. In the present paper we shall discuss briefly some of these factors and the efforts that have been made to deal with them in the Adult Cardiac Clinic of Bellevue Hospital during the past five years.

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This division of the subject was not quite so evident twenty years ago, particularly in this country, when small doses of digitalis were very popular. In a recent edition of a formulary that came to our attention a prescription was found recalling those days, in which from 5 to 15 drops of the tincture of digitalis every eight hours is recommended for the treatment of auricular fibrillation. Eggleston [1] found the principle employed in the cat unit method of standardization of digitalis applicable to the use of digitalis in man. Although some have since failed to see the definite relationship between the cat unit and the body weight of patients with heart disease that seemed in evidence from Eggleston's work, that study has nevertheless popularized the large dose method of administering digitalis, the safety and the value of which in the treatment of heart failure have been confirmed in numerous subsequent studies, and serves as a general guide for full digitalization in cases in which evidence of digitalis effects is not readily obtained.

The administration of full doses of digitalis to restore the failing heart has emphasized the existence of the second problem in the use of the drug; namely, prevention of the recurrence of heart failure. Up to the present, this has not received the attention that it deserves. It is common experience in the clinic to find a patient who has recovered from acute heart failure in bed at home under the care of a private physician or in the hospital and then discharged with little or no provision for the subsequent use of digitalis in a man-

* From the Adult Cardiac Clinic of Bellevue Hospital and Department of Pharmacology of Cornell University Medical College.

1. Eggleston, Cary: Digitalis Dosage, Arch. Int. Med. **16**: 1 (July) 1915.

ner that is adequate to maintain the best condition of the circulation. This patient returns to bed with acute heart failure every six months or so under this type of management. With the proper use of digitalis in the clinic after leaving the hospital, he continues for three or four or five years without any attacks of failure. There are, of course, other factors that contribute to the result in varying degrees, depending on the proper medical and social service organization of the clinic, assuring constant attendance and proper occupation for the patient, but with these factors we are not at present concerned.

We dwell on the distinction between these two problems because we believe that failure to take into consideration the differences in the conditions attending the use of digitalis to overcome an attack of heart failure and those attending the use of the drug to prevent the recurrence of heart failure has interfered with adequate study of the latter problem. For instance, after full digitalization, patients may often go for months without the drug and without symptoms of failure. This obviously signifies that the effect of digitalis on the heart is partly direct and partly indirect as the result of the general improvement in the circulation which, though initiated by the drug, tends to sustain itself after the drug has been eliminated or destroyed. Nevertheless, it is often assumed that in order to retain the effects produced by the initial full doses of digitalis, it is necessary to keep up the "saturation" by giving daily doses equal to the amount of the drug eliminated a day. This view does not take into consideration the tendency for the circulation to remain improved without the drug. We believe that the theory has been simplified at the expense of the facts. From our studies we feel fairly certain that the degree of "saturation" with digitalis necessary to produce the best results in the initial digitalization is frequently in excess of that necessary to maintain the effects so induced over long periods of time. We cannot go into this question more fully at this point. It has been under investigation in the clinic, and the observations will be published in a subsequent paper. Suffice it to say here that, although various doses and methods for the maintenance of digitalis effects have been recommended, the principles involved have not been clearly defined.

DOSAGE FORM

The form in which digitalis is dispensed to ambulatory, working patients is a matter of much importance. Liquid preparations are not suitable. One element of uncertainty in dosage has been largely overcome by the use of compressed tablets of dried digitalis leaf, the daily quantity administered preferably in a single dose. The active principles of the leaf are absorbed as rapidly and effectively as of the liquid preparation of the same specimens. When the change was made from the tincture to the tablet form, a few patients complained that the latter either induced nausea or was not as effective in maintaining their improvement. Since the evidence that the drug was at fault was not satisfactory, they were urged to continue and with proper assurance the prejudice against the tablet form in these few cases was easily overcome.

PREPARATION

In the administration of digitalis to a patient for many months, the specimen of the drug as well as the reaction of the heart may change. The difficulty of variation in activity of different specimens is overcome in a measure by the usual methods of biologic standardization, although it has been shown that tests made on the same preparation by different competent laboratories may sometimes give discordant results.[2] Digitalis varies, however, not only in its activity but also in its absorbability [3] and rate of elimination,[4] both of which factors are not tested by any of the usual methods of biologic standardization. No form of digitalis, whether it is the crude drug, a galenical preparation or a proprietary preparation, is free from these objections. Hence it is impossible to interpret observations in the study of digitalis action when different supplies of the drug of unknown differences in behavior have been employed. The plan [5] which we adopted in the clinic, therefore, was to obtain a quantity of digitalis leaf sufficient to last for a period of from two to three years. This preparation was standardized by the cat unit method and a sample tested on several patients to determine its clinical effectiveness. It was then made up into compressed tablets of varying sizes, those containing one-half cat unit, and 1, 2 and 3 cat units of the leaf having been found to be most satisfactory.

QUESTION OF DETERIORATION

This method, we thought, would yield the nearest approach to constancy of preparation. Nevertheless there was a possible objection to this procedure that was to be considered. It is commonly held that digitalis preparations deteriorate when kept for long periods of time. Since we were to keep a specimen of the drug for two or three years, the question naturally arose whether it would not lose in activity or undorgo changes that might alter its behavior in other ways. It is a difficult matter, if not impossible, to determine minor changes in the behavior of a specimen of digitalis. The literature dealing with the subject of digitalis deterioration is far from convincing that the drug changes with time under ordinary conditions to a degree that is important from the clinical standpoint.

At the clinic we have been able to gather some data on the keeping qualities of the powdered digitalis leaf. In all, we have employed four different specimens. One has been in our possession for five years, one for four years, one for three years, and the last for more than two and one-half years. They were all standardized by the cat method (in one case also by the frog method) when they were obtained, and again at the end of these respective periods. No special precautions were observed in the preservation of the specimens to be tested. They were kept in loosely stoppered, amber colored bottles on the shelf in a dark, rather moist cellar. In not a single instance was there any evidence of loss of strength of the digitalis during these periods, as determined by the cat method. VanderHoof and Haskell [6] recently reported some studies on fresh and old tinctures of digitalis from which they concluded that old tinctures did not lose in activity when injected into the vein but that they did lose in absorbability for the frog, the cat and man. In the case of the specimen of powdered leaf which we kept for five years, the frog unit was 5 cc. per kilogram for a tincture made when it was first obtained, and the same frog unit was found

2. Knafft-Lenz, E.: The Physiological Assay of Preparations of Digitalis, J. Pharmacol. & Exper. Therap. **29**: 407 (Oct.) 1926.
3. Eggleston, Cary; and Wyckoff, John: The Absorption of Digitalis in Man, Arch. Int. Med. **30**: 133 (Aug.) 1922.
4. Gold, Harry: Digitalis Elimination, Arch. Int. Med. **32**: 779 (Nov.) 1923.
5. This plan has since been adopted by the Heart Committee of the New York Tuberculosis and Health Association, which now distributes the digitalis tablets to the cardiac clinics that are members of the Association.
6. VanderHoof, Douglas; and Haskell, C. C.: The Comparative Rate of Absorption of Fresh and of Old Tinctures of Digitalis, Am. Heart J. **1**: 165 (Dec.) 1925.

for a tincture prepared from the same specimen of leaf at the end of this period.

From the standpoint of the clinical efficiency of digitalis leaf kept for long periods, we were unable to discover any deterioration in three specimens, each employed over a period of about two years, and in a fourth specimen now in use nearly three years.

SUMMARY

Digitalis is employed in the cardiac clinic primarily for the purpose of preventing heart failure or the recurrence of heart failure in the sense in which we have used the term. In this respect the task in the clinic is different from that in the hospital. The problem this presents can be studied properly only by direct observation of the ambulatory cardiac patient, in which case the theory and practice derived from the study of acute heart failure in the bedridden patient are not satisfactory guides. Since these studies cover long periods of time, a method has been adopted in the clinic to obtain constancy in the preparation of digitalis in order to be able to distinguish changes in effects that may be due to altered condition of the heart from those due to unknown variations in different specimens of the drug. A study of four specimens of digitalis gave no indication of deterioration by the cat method when the powdered digitalis leaf was kept for a period up to five years, nor perceptible loss in clinical efficiency during the periods of from two to nearly three years in which they were used. It is commonly stated by physicians that certain preparations of digitalis are more readily tolerated than others. This has led to needless shifting from one to another preparation of the drug to obtain better therapeutic effects or to avoid disagreeable or toxic symptoms, rather than to analysis of the circumstances attending the failure to obtain in any given case the desired results. In nearly all such cases, provided an active specimen of digitalis has been employed, the failure to obtain the desired effect will be found to be due to factors not overcome by other preparations of the drug, although isolated, uncontrolled observations may seem occasionally to point to the contrary. In this connection, our experience in the clinic is noteworthy. As already indicated, in the five years during which more than 500 patients were treated with four different specimens of active powdered digitalis leaf in the form of compressed tablets for periods of from months to years, there was not a single instance in which it was found necessary for any reason to resort to any other form of digitalis medication.

The Hunterian Oration.—Today, Mr. President and Gentlemen, we celebrate the two-hundredth anniversary of the birth of John Hunter, the founder of modern scientific surgery, the creator of our museum, and the patron saint of our college. Since 1814 an oration—the Hunterian Oration—has been given, at first annually, and then, after 1856, biennially, in this college in his memory. A large proportion of these orations have dealt with one or more of the numerous branches of Hunter's activities; in fact, it has always seemed to me that there is scarcely any part of the work of Hunter which has not been commemorated in one way or another at one of these orations. On examining the conditions as given in the trust deed which created this oration it is stated that "The oration is to be delivered in the theater of this college on the 14th February, and such oration is to be expressive of the merits in comparative anatomy, physiology and surgery not only of John Hunter but also of such persons who have become deceased whose labors have contributed to the improvement and extension of surgical knowledge."—Waring, Holburt: *Lancet*, February 18.

CAUDAL EPIDURAL ANESTHESIA IN PERINEAL SURGERY OF THE GENITO-URINARY TRACT

A REPORT OF ONE HUNDRED AND SIXTY-FIVE CONSECUTIVE CASES *

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This report concerns 165 consecutive cases of epidural anesthesia in perineal operations on the prostate and seminal tract at the Brady Clinic, from Aug. 4, 1926, to Aug. 5, 1927. This series includes 140 cases of perineal prostatectomy and three of punch operation for benign prostatic hypertrophy; sixteen cases of conservative and three of radical perineal prostatectomy for carcinoma of the prostate, and three cases of radical excision of the entire seminal tract for tuberculosis. My purpose in this paper is to consider the successes and failures of the epidural method, the reactions to anesthesia and the means for controlling them, and the outcome in the cases studied.

TECHNIC OF INJECTION

Epidural anesthesia was induced in all cases by the single injection of 20 cc. of a 3 per cent solution of procaine hydrochloride into the extradural space of the sacral canal. Paravertebral injections for blocking the nerves at the sacral foramina on either side, or transsacral intradural injections to augment the caudal anesthesia, were not used at any time, nor was the extradural injection repeated in case of failure. Patients were placed in the horizontal ventral position on the Young operating table, with the pelvis raised by the perineal elevator.

So much has been written on the precautions necessary to prevent the intrathecal or intravenous introduction of the anesthetizing drug since Cathelin, in 1900, introduced the method of epidural injection through the sacral hiatus that details need not be repeated here. Attention is called to the necessity of carrying out a strictly sterile procedure and of using only fresh drugs. In this series, procaine hydrochloride, prepared by the Abbott Laboratories, was made up immediately before each operation without the addition of epinephrine or other substances. Morphine, $\frac{1}{6}$ or $\frac{1}{4}$ grain (10 to 16 mg.), with or without atropine, $\frac{1}{150}$ or $\frac{1}{100}$ grain (0.4 to 0.6 mg.), preceded by a half-hour the caudal injection. Scopolamine, formerly given in combination with morphine, was not used in this series, for its occasional influence in lowering the blood pressure or producing psychic derangement had led to an unjust incrimination of the procaine as causing these symptoms.

RESULTS

Complete abolition of pain following the single epidural injection was secured in 84 per cent of cases for the entire series, while in the remaining 16 per cent general anesthesia was required. Nitrous oxide-oxygen or ether was used. Of the patients in whom the epidural injection was reinforced by general anesthesia, thirteen, or 8 per cent, were given additional anesthesia throughout operation and the results are classified here as unsuccessful. The explanation in three instances was failure to enter the hiatus and, in one, the abandonment of injection when blood continued to be

* From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital.

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aspirated from the extradural space. Four patients who were very nervous and apprehensive refused to undergo operation unless they were put to sleep. In five cases the reason for failure was not apparent.

The thirteen remaining patients received small amounts of additional anesthesia during the last few minutes of the operation. The extreme lithotomy position became unbearable to five, who required relief for this discomfort and not for perineal pain. One of this group was much deformed from Paget's disease, and the rest had marked hypertrophic arthritis. Pain from bladder traction during the final enucleation of the prostate necessitated more anesthesia in eight cases.

From a review of these cases in which injection was reinforced by a general anesthetic, it is apparent that many causes other than operative pain may necessitate a general anesthetic. As showing how completely pain may be abolished by the caudal method, the entire success of the extradural injection in the three cases of Young's radical perineal prostatectomy for carcinoma and in the three cases of Young's radical excision of the seminal tract for tuberculosis is of unusual interest. Both were time-consuming, difficult procedures; yet until the end of operation, which in several instances required two hours, analgesia was complete. Traction on the seminal vesicles, vasa and base of the bladder, the rectum and the peritoneum in the pouch of Douglas

TABLE 1.—*Results of Anesthesia for the Entire Series*

Diagnosis and Operation	Number of Cases	Successful		Reinforced		Unsuccessful	
		No.	%	No.	%	No.	%
Benign prostatic hypertrophy							
Perineal prostatectomy	140	117	84	11	8	12	8
Punch operation	3	3	100	0	0	0	0
Carcinoma of prostate							
Conservative perineal prostatectomy	16	13	81	2	12.5	1	6.5
Radical perineal prostatectomy	3	3	100	0	0	0	0
Tuberculosis of seminal tract							
Radical excision	3	3	100	0	0	0	0
Total	165	139	84	13	8	13	8

is a necessary part of these operations, and is a severe test of the efficiency of caudal anesthesia. It should be further emphasized that the great relaxation of the perineal structures under caudal injections, a relaxation that far exceeds anything obtained with gas or ether, would in itself justify the method even if analgesia were not obtained.

FAILURES

In almost every case the explanation of failure is faulty injection of the solution. Pickles [1] draws the conclusion from sixty-three epidural inductions that "the method is successful whenever the solution is brought in contact with the sacral nerves, and that failure to obtain anesthesia indicates failure to place the anesthetic where it can affect the nerves involved." Anatomic anomalies sometimes make it impossible to insert the needle, and traumatic or pathologic abnormalities accomplish the same result. Three other factors may be mentioned: beginning the operation before the drug has had time to act, selecting apprehensive, uncooperative patients, and using stale, deteriorated procaine. Goldstein and McBee [2] emphasize these points. They found that perianal analgesia appeared in from five to eight minutes, perineal in from eight to twelve, scrotal in from twelve to fifteen, and penile and urethral in from fifteen to twenty. In this clinic, it is customary to wait twenty minutes after the completion of injection before beginning any operative procedure.

Recent reports from other clinics indicate that there is no unity of opinion among observers as to what constitutes a failure, and classifications, accordingly, vary widely. Again, different operations demand various degrees of analgesia. For these reasons, comparison of statistics is unsatisfactory.

Shaw [3] reported from this clinic, in November, 1925, 17 per cent of failures in 100 cases of perineal prostatectomy, and included in his article a survey of the literature up to that time. To avoid repetition, reference will be made here only to some of the subsequent papers. In a series of 503 injections, Goldstein and McBee [2] obtained 88 per cent successful analgesia for cystoscopic procedures in men, but did not include any perineal operations. Char [4] had seven failures in 166 cases with twenty types of operation. Many were of a minor nature, about the anus, vagina and urethra; perineal prostatectomies were not done. In only the three instances in which he failed to enter the canal did Pickles [1] not abolish pain in sixty-three epidural injections. Here, again, major perineal manipulations were not undertaken. In France, Bilger [5] had almost 50 per cent failures in twenty-five cases in which bladder, urethral and prostatic (suprapubic) operations were performed, while Laskownicki [6] says that he has never been able to obtain complete anesthesia of the prostate by the epidural method. Mumey and Elliott [7] find in twenty-five cases that only "occasionally the anesthesia (epidural) may include the prostate," while Davis [8] augmented caudal with paravertebral injections in his 107 consecutive cases of perineal prostatectomy.

REACTIONS

Serious reactions did not occur in any of the 165 cases, and no reaction at all occurred in 52 per cent of this number. This group, it might be added, showed elevation or depression of less than 30 mm. of mercury in the systolic level of the blood pressure. When symptoms followed induction, they fell into two distinct groups:

First Type.—The larger of these groups makes up 38 per cent of the series of 165 cases. The patients felt weak, apprehensive and sometimes nauseated; there was pallor and sweating of the forehead, a slowing of the pulse, a fall in blood pressure of at least 30 mm., a staring fixed expression of the eyes, a retarded response to questions, or a response only by grunts. In a few cases the reactions went further: vomiting took place, all response to questions ceased, and apparent temporary unconsciousness supervened. The blood pressure had always taken a great drop, as much as 130 mm. in one case. Paralytic action of the procaine on the sympathetic nerves, when the solution extends beyond the sacrum, is the probable cause of this group of symptoms.

Second Type.—Only 10 per cent showed the other type of reaction in which the symptoms are those of

1. Pickles, W.: Sacral Anesthesia, Rhode Island M. J. **8:** 193-197 (Dec.) 1925.
2. Goldstein, A. E., and McBee, T. J.: Caudal Anaglesia in Cystoscopy, J. Urol. **16:** 85-92 (July) 1926.
3. Shaw, E. C.: Epidural Anesthesia for Perineal Prostatectomy: Experimental and Clinical Study with Report of One Hundred Consecutive Cases, J. Urol. **15:** 219-265 (March) 1926. The literature prior to 1925 is covered by the bibliography appended to this paper.
4. Char, G. Y.: Caudal Anesthesia, China, M. J. **40:** 57-62 (Jan.) 1926.
5. Bilger, F.: De l'anesthésie épidurale en chirurgie urinaire, J. d'urol. **19:** 111-126 (Feb.) 1925.
6. Laskownicki, S.: Anesethésie épidurale et anesthésie sacro-lombaire en urologie, J. d'urol. **22:** 390-394 (Nov.) 1926.
7. Mumey, N., and Elliott, D. C.: Caudal anesthesia, Am. J. Surg. (Anesthesia Supp.) **39:** 39-42 (April) 1925.
8. Davis, Edwin: Perineal Prostatectomy under Sacral Anesthesia: One Hundred and Seven Consecutive Cases with One Death, J. A. M. A. **88:** 784-786 (March 12) 1927.

general procaine intoxication: restlessness or excitement at the onset, flushing of the face, acceleration of the pulse, quick and deep respirations, increase in the blood pressure, and sometimes vomiting. A few patients had involuntary twitching movements of the face and arms; one became unconscious for a time, but none had convulsions.

CONTROL OF REACTIONS

Estimation of the systolic blood pressure, every five minutes or more frequently, has been found to be the most satisfactory means of following the patient's reaction. This is recorded by an assistant from the beginning of induction till the end of operation. For the first type of reaction epinephrine, 1:1,000 solution, as prepared by standard reliable drug houses, has proved most satisfactory in controlling symptoms; so satisfactory and specific, in fact, that the amount of epinephrine necessary is a measure of the severity of the reaction. When a fall in blood pressure exceeding 30 mm. had occurred, 5 minims (0.3 cc.) was given intramuscularly, this single dose being followed by a permanent return to normal in half of the sixty-three patients who received epinephrine. Most of the patients did not have any abnormal subjective sensations. Fourteen required two such injections; seven received 15 minims (1 cc.); three, 20 minims (1.25 cc.); one, 25 minims (1.5 cc.), and one, 30 minims (2 cc.).

Eight patients showed a very marked fall in blood pressure, five lapsing into unconsciousness. Epinephrine was administered intravenously in doses of 1 minim, or 0.06 cc. (rarely more), with a very prompt return to normal in every instance. Operative procedures were carried out successfully without additional anesthesia in all eight of these patients, all of whom had uneventful convalescences and left the hospital well. No untoward results have been observed from the use of epinephrine.

Patients with the second type of reaction were reassured and kept quiet, and in from ten to thirty minutes returned to normal. Increase in pressure of 80 mm. was observed in one man with advanced arteriosclerosis and an enlarged heart. He became unconscious, but was quickly restored with glyceryl trinitrate. Mounting blood pressure was controlled in three other cases by amyl nitrite.

The first type of reaction was found most commonly among patients with exhausted cardiovascular systems, or with such conditions as marked emphysema, myocardial insufficiency or uremia. The explanation is self-evident: a cardiovascular system that is already badly deranged is unable to meet adequately a splanchnic vascular dilatation from sympathetic nerve paralysis. Conversely, it was the relatively more normal persons who did not react. This group had an average blood pressure of 140 mm. Marked hypertension or hypotension was encountered in only a few patients without some symptoms developing.

The noteworthy thing is how well the group of old men in this series underwent caudal injections without mishap. Many were "veritable museums of pathology." A brief enumeration of some of the preoperative complications will emphasize this point. Advanced arteriosclerosis was noted in forty-six, associated with myocarditis in twenty-five, myocardial insufficiency in nine, and auricular fibrillations in two. Emphysema and bronchitis were present in twenty-five, while on admission seven had clinical uremia. Pronounced obesity was present in five; one had a large aortic aneurysm. Six had diabetes mellitus. The distinct advantages of the caudal method are particularly evident in this complication. Blood pressure determinations, just before induction was started, showed systolic levels under 100 mm. in one, under 120 mm. in twenty-eight; over 150 mm. in sixty-eight, and over 200 mm. in ten. Hypertension or hypotension is not a contraindication to extradural anesthesia.

The factor of age plays a tremendous part in the treatment and outcome in the type of cases here discussed. Table 2 presents a summary of the ages in the 165 cases.

TABLE 2.—*Age Groupings*

Age	Number of Cases
30 to 40 years	1
40 to 50 years	1
50 to 60 years	40
60 to 70 years	79
70 to 80 years	41
80 years and over	3

The final results in these cases are given for two reasons: to furnish data for comparison with series in which other methods of anesthesia have been used, and to show that none of the nine deaths were due to the caudal injection. Of the 165 patients, 76 per cent left the hospital well; 18.5 per cent were improved, and 5.5 per cent died. The importance of age is especially apparent in the latter group. Two were between 65 and 70 years, six were between 70 and 80, and one was 84 years old. Two deaths occurred suddenly on the seventh and twenty-third days after operation from pulmonary emboli; three patients died during the first week from generalized septicemia, two died of heart failure, on the fourth and tenth days, respectively, with the onset of auricular fibrillation. Hypostatic pneumonia caused death on the forty-fifth day after operation in one case of extensive carcinomatous metastases, while the last patient died on the seventh day of aspiration pneumonia and diabetic coma. It is worthy of note that none of the patients showed any signs of infection at the site of injection, or any evidence of permanent nerve injury from the procaine hydrochloride.

TABLE 3.—*End-Results in the Cases*

Diagnosis and Operation	Number of Cases	Well		Improved		Died	
		No.	%	No.	%	No.	%
Benign prostatic hypertrophy							
Perineal prostatectomy	140	118	85	15	10	7	5
Punch operation	3	3	100	0	0	0	0
Carcinoma of prostate							
Conservative perineal prostatectomy	16	0	0	15	94	1	6
Radical perineal prostatectomy	3	1	33	1	33	1	33
Tuberculosis of the seminal tract							
Radical excision	3	3	100	0	0	0	0
Totals	165	125	76	31	18.5	9	5.5

CONCLUSIONS

In 165 consecutive perineal operations in which a single epidural injection of 20 cc. of 3 per cent procaine hydrochloride solution was used as an anesthetic agent, success, as measured by the complete abolition of pain, was present in 84 per cent, while in 16 per cent some additional anesthetic was required.

The series included 140 cases of perineal prostatectomy for benign hypertrophy; sixteen cases of conservative and three of radical perineal prostatectomy for carcinoma, and three cases of radical excision of the entire seminal tract for tuberculosis. The complete success of the anesthetic in the three cases each of

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radical operation for carcinoma and radical excision of the seminal tract for tuberculosis shows the splendid possibilities of this simple method of anesthesia.

Serious reactions did not occur in the entire series and no reaction at all took place in 52 per cent of the cases. Symptoms characteristic of generalized procaine intoxication occurred in 10 per cent; the remaining cases showed symptoms secondary to visceral vascular dilatation from sympathetic nerve paralysis. The value of epinephrine in controlling this type of reaction was demonstrated.

The many complications commonly seen in old men, especially derangements of the cardiovascular, respiratory and renal systems, do not contraindicate the use of the epidural method. Its safety, when 20 cc. of a 3 per cent solution is used, is shown by the absence of any serious reactions, while its value over other methods in the presence of these complications is self-evident. Furthermore, the previous injection of procaine does not in any way interfere with the subsequent administration of a general anesthetic in case of failure. Attention is called to the great degree of relaxation of the perineal structures following epidural injections, a factor often indispensable when operations are performed in this field.

EPIDURAL CAUDAL ANESTHESIA IN PROSTATIC SURGERY*

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In the choice of an anesthetic in prostatic cases there are several factors of importance to be considered. The first of these is the kidneys. A large proportion of all cases of prostatic hypertrophy are associated with so much back pressure that definite impairment of the kidney function is present. Fortunately, under drainage, generally with a simple urethral catheter, the function rapidly improves and the operation under almost any general anesthetic is fairly free from danger; but there are many cases in which, with the best preoperative care, the kidney is far from normal when operation must be carried out. In such cases ether anesthesia is considered dangerous, nitrous oxide less so, and perhaps ethylene the least of general anesthetics, but in all such cases it would be preferable to operate under some other anesthesia than general. Cardiovascular conditions also occur in a very large percentage of cases. In our series about 30 per cent have on admission a blood pressure over 160 systolic, and not infrequently we have been unable to reduce it below 200, and in several instances during operation the blood pressure has reached 270, and in two cases 300. We have tried various forms of general anesthesia in these high blood pressure cases, but in almost all there was distinct and sometimes formidable rise during operation. Myocarditis and valvular lesions are also frequently encountered. Some form of heart disease was present in 48 per cent of 198 cases which were carefully tabulated recently, and in many of these nitrous oxide is distinctly contraindicated, and for the majority ether has seemed the safest general anesthetic; but, owing to the fact that respiratory infections are not infrequent in these old men, particularly bronchitis, there are many reasons for avoiding ether anesthesia.

The desirability of using local or some form of spinal anesthesia is, therefore, evident. Local anesthesia has been used by Tinker and others, but it is tedious and generally unsatisfactory. Spinal anesthesia has been employed in this clinic and in other clinics quite extensively, but in our opinion it is fraught with a certain amount of danger, the region anesthetized seems so much more extensive than is necessary, and the severe reactions, although infrequent, are so dangerous and so difficult to counteract that for a long time we have avoided this method of anesthesia in prostatic operations. A great deal has been written on caudal anesthesia, generally combined with sacral, and reports have been conflicting as to the success and also to the dangers of the method. In our experience injection of the parasacral canals adds greatly to the difficulty of the procedure, and owing to several serious reactions and

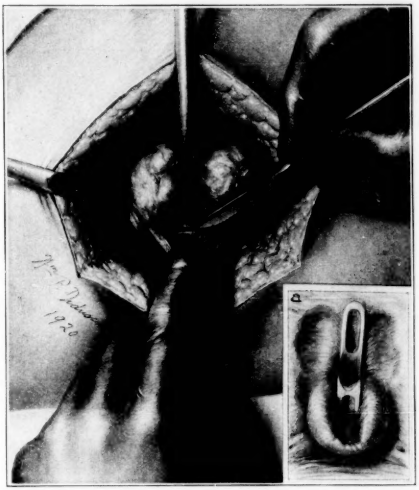

Fig. 1.—In the operation of conservative perineal prostatectomy, only occasionally is there any pain produced by the movement of the blades of the tractor in the bladder, as shown in *a*. In operations under caudal anesthesia this is not sufficiently severe to warrant local anesthesia for the bladder, and in most cases the patient does not complain.

one death we have definitely abandoned combined sacral and caudal anesthesia.

We have used caudal anesthesia now since 1924 and have employed this anesthesia in an increasingly large number of cases. At first we used a 1 per cent solution, and were immediately struck with various advantages, the principal one being the relaxation of the muscles of the wound, facilitating a larger exposure and a distinctly lessened tendency to bleeding. There were, however, unexplainable failures and not infrequently reactions characterized by marked drop in blood pressure and sometimes pronounced shock. We could not find any convincing literature as to the strength of the drug to employ or the amount necessary for successful anesthesia. On this account we inaugurated a careful study of the problem, which was undertaken by Dr. E. Clay Shaw, whose comprehensive report has done much to settle many of the uncertainties of caudal anesthesia. After a careful study of the anatomy, he

* From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital.

carried out many injections on the cadaver and demonstrated that 75 cc. of a methylthionine chloride solution penetrated to the third cervical vertebra, 50 cc. to the seventh cervical, 35 cc. to the seventh thoracic, 30 cc. to the ninth thoracic, 25 cc. to the eleventh thoracic, 20 cc. to the twelfth thoracic, and 15 cc. did not reach beyond the lumbar vertebrae. Clinical experience showed that, if a 1 per cent solution was used, 40 or 50 cc. was necessary, but that the anesthesia extended far beyond the limits required for anesthesia of the prostatoperineal region. When 30 cc. was used, a 2 per cent solution was required. Here again the region penetrated was unnecessarily great. Twenty cubic centimeters of a 3 per cent solution of procaine hydrochloride was finally adjudged to be the proper strength and amount to anesthetize fully the nerves reaching the region of the prostate, seminal vesicles, perineum and genitalia.

In a careful study of 100 cases, Dr. Shaw proved conclusively that better results were obtained by the

Fig. 2.—In Young's radical operation for carcinoma of the prostate, caudal anesthesia has been entirely successful, but slight pain may be experienced when the pedicle of the seminal vesicle is clamped and ligated, as shown here. Local injections may prevent this.

use of 20 cc. of 3 per cent solution and with distinctly less reaction. Previous statistics had shown that one could not expect the vesical mucosa to be completely anesthetized by epidural anesthesia, but in our operation of conservative perineal prostatectomy (fig. 1) we found that in the majority of cases the anesthesia was complete not only for the operations on the prostate but also for manipulations within the bladder. Turning the prostatic tractor to deliver the intravesical lobes was usually quite painless. In some instances the introduction of stone forceps for the removal of a vesical calculus was accompanied by pain, but this was usually transitory. We were amazed to find that the anesthesia was satisfactory in such a prolonged and extensive operation as radical removal of the prostate with the vesical neck, seminal vesicles and ampulla of vasa deferentia for carcinoma (fig. 2). In this operation the only pain experienced in several cases was when the vasa deferentia were reached. Clamping, division and ligation of the vasa deferentia and pedicles of the seminal vesicles almost invariably caused pain, so that now we always make a local injection of procaine hydrochloride into this region, and have found that

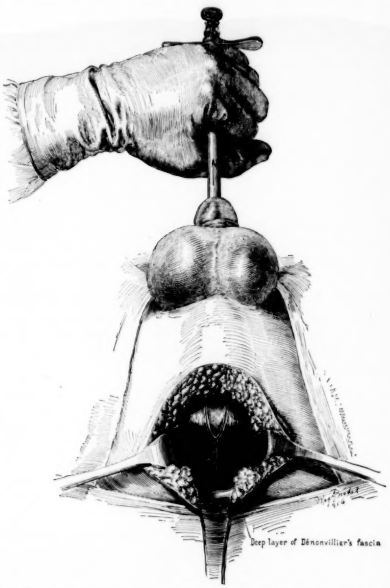

Fig. 3.—In Young's radical operation for tuberculosis of the seminal tract, caudal anesthesia gives as a rule perfect anesthesia when the prostate and seminal vesicles are exposed as above.

this gives satisfactory anesthesia. In radical operation for tuberculosis of the seminal tract, we found here also that manipulations on the vasa deferentia and

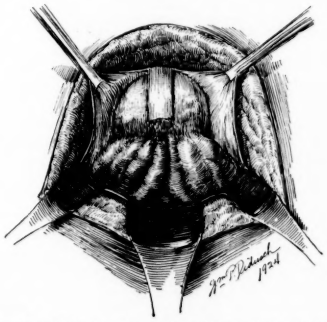

Fig. 4.—In exposing the upper portions of the seminal vesicles and vasa deferentia, as shown here, pain may be experienced in the upper ends of these structures and local injections required.

pedicles of the seminal vesicles were painful (figs. 3 and 4). By previous injection of the region with a long needle with 1 per cent procaine hydrochloride, satisfactory anesthesia could be obtained, except when

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the vas deferens was forcibly divulsed from its bed and pulled out through the wound in the groin (fig. 5) after the tuberculous epididymis had been separated from the testis. This procedure, however, is of such short duration that the pain is easily endured. Sacral anesthesia with 20 cc. of 3 per cent solution of procaine hydrochloride has, in these radical operations, been extremely satisfactory in that it has given a great relaxation of the muscles, making it possible to retract widely and obtain much better exposure, and the slightly lowered blood pressure gives a dry wound, thus eliminating much of the clamping necessary when general anesthesia, especially nitrous oxide, is used.

At my request, Dr. George Packer Berry has made a careful analytic study of 165 cases of prostatic surgery in which epidural sacral anesthesia has been employed in my service, and as his paper [1] accompanies this, many of the details as to treatment and results will be omitted here. This study, taken with the previous analysis of 100 cases by Dr. Shaw, makes 265 cases which have been carefully studied. There were no operative or anesthetic deaths. In view of the fact that we have been dealing with men of the prostatic age, the majority of whom are quite old and frequently over 75 and 80 and sometimes over 90 years of age, and also that in these combined statistics the work of three visiting urologists and numerous resident and assistant resident urologists has been included, the occurrence of ten deaths subsequently (mortality 3.7 per cent) shows, I believe, the benignity of this form of anesthesia.

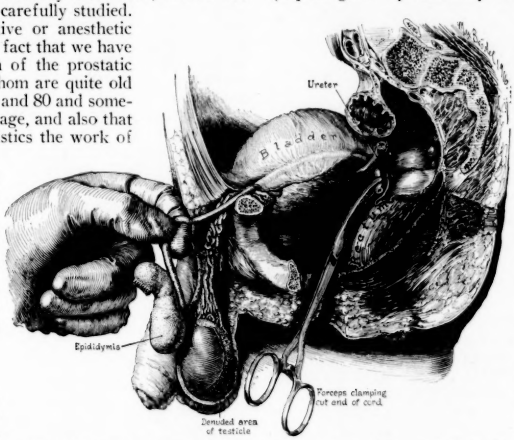

Fig. 5.—In withdrawing the vas deferens through the groin after removal of the seminal vesicles and ampullae, slight pain may be experienced, which can be partly relieved by a deep injection into the inguinal canal.

CONCLUSION

I believe that epidural sacral anesthesia with 3 per cent procaine hydrochloride is the anesthetic of choice in prostatic and other perineal surgery. It is particularly valuable in the very aged, in cases of high blood pressure, and in the presence of cardiac lesions, renal impairment and respiratory infections. The relaxation obtained and the freedom from hemorrhage are much better than with a general anesthetic, and the ability of the patient to drink water in abundance immediately after the operation is a distinct advantage. The few failures are not a contraindication.

1. Berry, G. P.: Caudal Epidural Anesthesia in Perineal Surgery of the Genito-Urinary Tract, this issue, p. 1018.

Accomplishment Versus Requirements.—Let those responsible for the curriculum lessen the number of specific facts and skills which the average child is supposed to master in a given time. Let there be considerable cutting down of the requirements for the slower pupil. All along the line, from the first grade through to the university, there should be more differentiation, so that instead of one diploma for each high school and college there shall be several, each of which shall stand for a very definite accomplishment defined thereon. —Myers, G. C.: *Ment. Hyg.* **12**:24 (Jan.) 1928.

PORRO CESAREAN SECTIONS UNDER LOCAL (INFILTRATION) ANESTHESIA

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Local anesthesia has become more and more popular in all fields of surgery. Likewise in obstetrics there has been an extended use of this form of anesthesia. For many years classic cesarean sections have been done under local anesthesia, and in 1925 De Lee [1] pointed out the feasibility and advantages of performing the cervical cesarean section under local (infiltration) anesthesia. However, as far as I am aware, no one has described the performance of Porro cesarean sections (supravaginal hysterectomy after cesarean section) under direct infiltration anesthesia. The four cases here reported illustrate that Porro operations can be done under infiltration anesthesia without any difficulties.

For the local anesthetic, 0.5 per cent procaine hydrochloride is used, to which, after sterilization, 2 drops of 1:1,000 epinephrine are added for each ounce. About 12 ounces (355 cc.) of this solution is prepared but I have never used that much for one operation. In a series of forty-two operations which I performed under local anesthesia, the average amount of anesthetic used was less than 6 ounces (178 cc.). The average for the Porro cases was approximately 8 ounces (236 cc.).

TECHNIC

Just as the injection of the skin is begun, the patient is given ¼ grain (16 mg.) of morphine and $\frac{1}{200}$ grain (0.3 mg.) of scopolamine. Since I perform the low or cervical type of cesarean section almost exclusively, I employ a low, midline incision for this operation and also for Porro cesarean sections. I begin by injecting a small amount of the procaine hydrochloride solution into the skin in the midline at a point which is to be the upper end of the proposed incision. For this purpose, a fine needle is used in order to produce as little pain as possible. After the wheal is made, a larger needle is substituted and is inserted into the opening made by the fine needle. Then procaine hydrochloride is injected into and under the skin all the way down to a point just above the symphysis pubis. The solution is injected not only in the midline but also for a distance

1. De Lee, J. B.: Surg. Gynec. Obst. **40**: 230 (Feb.) 1925.

of about 3 cm. on each side of the midline, all the way to the pubis. As the latter area is extremely sensitive, a good deal of procaine hydrochloride is injected there. The needle is kept in motion constantly to avoid introducing the solution into the blood vessels. After a delay of four or five minutes to permit anesthetization of the skin and subcuticular fat, an incision through the skin and fat is made with a sharp knife. Then the anterior rectus fascia and the rectus muscles in the midline are desensitized, but a new needle is used. Again more solution is injected into those parts of the fascia and muscle which are near the pubis. After a few minutes of waiting, the fascia is incised with a new knife and the rectus muscles are separated from each other in the midline. The posterior rectus fascia and the parietal peritoneum are then anesthetized for about 4 cm. on each side of the midline and a good deal of solution is injected over the bladder and into the space of Retzius. The peritoneal cavity is then opened. The reflection of the bladder peritoneum over the lower uterine segment is exposed and, since this is only loosely connected with the uterine wall, it can easily be elevated with tissue forceps. About 1½ or 2 ounces (45 or 60 cc.) of procaine hydrochloride solution is injected under the loose peritoneum at one spot (fig. 1) and, by means of a finger, the solution is spread beneath the bladder and also out into the broad ligaments (fig. 2). It is essential to inject enough solution so that a sufficient amount can be squeezed into the broad ligaments, outward, upward and downward. No further anesthetization is required until after the baby is delivered.

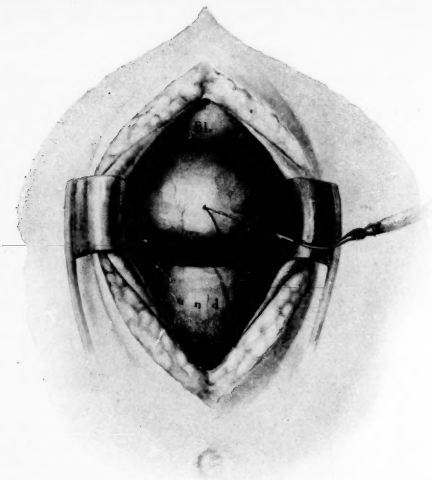

Fig. 1.—Exposure of field for Porro cesarean section under infiltration anesthesia. The solution of procaine hydrochloride is injected at one spot beneath the peritoneum which is loosely attached to the lower uterine segment. A catheter is left in the bladder to prevent distention.

When a cervical cesarean section is performed, the bladder peritoneum is incised transversely, the bladder is stripped down as far as one desires, and a vertical (sometimes transverse) incision is made in the lower uterine segment. The baby is extracted manually or with forceps, the placenta is removed, and the uterus is closed. When a Porro operation is performed, the bladder peritoneum is likewise cut across transversely and stripped downward but not very far, and I believe that in nearly all cases the incision in the lower uterine segment should also be made transversely and not vertically. The transverse incision is made in the lower uterine segment but near its junction with the body of the uterus (fig. 3). The ends of the incision point upward in the direction of the round ligaments. The transverse incision in the lower uterine segment is preferable, first, because it avoids the necessity of stripping the bladder off the lower uterine segment very far; secondly, because the amputation can be performed by simply continuing this transverse incision around to the posterior wall of the lower uterine segment, and, thirdly, because there is no necessity for sewing up a vertical incision in the cervical stump in addition to a transverse, circular one. After the baby has been delivered, clamps are applied to approximate temporarily the cut edges of the uterus (fig. 4). The placenta, the cord and the membranes are left in the uterine cavity. The uterus is very gently lifted out of the abdominal cavity. A small amount of procaine hydrochloride solution is injected subperitoneally on the posterior wall of the uterus along the line of amputation from one broad ligament to the other (fig. 5). The round ligaments are ligated distally, clamped proximally and cut between clamp and suture. Long clamps are applied to the broad ligaments close to the uterus (fig. 4). The adnexa are left unless there is a special indication for their removal. The broad ligaments are cut between the clamps down to the level of the transverse incision in the lower uterine segment (fig. 5). After it is certain that the uterine arteries or main branches are clamped, the original transverse incision in the lower uterine segment

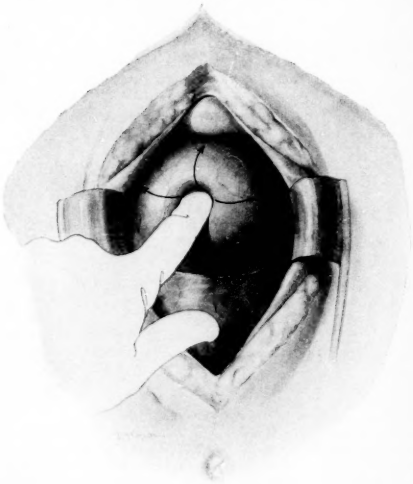

Fig. 2.—With a finger, the procaine hydrochloride solution under the loose peritoneum is gently pushed down under the bladder and well out into the broad ligaments, upward and downward.

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is extended all round the uterus, thus amputating it. Double ligatures are placed around the uterine arteries and the broad ligaments are ligated by figure of eight sutures. Of course, ligatures may be applied directly to the broad ligaments and uterine arteries without preliminary clamping. This was done in two of the four cases. The edges of the lower uterine segment are sutured, the round and broad ligaments are sewed to it, and the free peritoneal flap of the bladder is sewed over the entire mass (fig. 6). The abdominal wall is closed in layers as in any laparotomy.

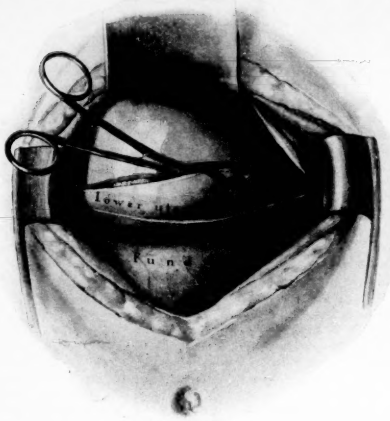

Fig. 3.—The loose peritoneum has been cut transversely, near its firm attachment to the fundus, and the bladder is retracted to expose the lower uterine segment. Part of the transverse, arched incision in the lower uterine segment has been made near the junction with the fundus and the remainder of the incision is indicated by the dotted line. Bandage scissors are used for incising the uterus. The spill of liquor amnii is taken up by means of an electric suction pump.

In doing this operation under infiltration anesthesia, it is essential that all pulling and tugging be avoided. I have not found it necessary to use abdominal pads, but they can be gently placed without producing pain.

REPORT OF CASES

CASE 1.—Mrs. E. B., a quadripara, aged 30, had had postpartum hemorrhages in her last two confinements and had almost died both times. Her mother had died in confinement from a cause unknown to the patient but thought to be postpartum hemorrhage. One sister and one cousin had died from a postpartum hemorrhage. In this patient most of the bleeding came from varicose veins in the vagina and vulva. She had the most extreme degree of varicose veins I have ever seen. They began at both feet and extended upward over the legs, the thighs, the vulva, the vagina, and the abdominal wall almost to the umbilicus. The patient was only 4 feet 10 inches (147 cm.) tall but weighed 179 pounds (81 Kg.) at term. The last menstrual period began, Feb. 15, 1925. Throughout the entire pregnancy the patient wore full-length rubber stockings and a special pad for the varicose veins in the labia and above the symphysis. She pleaded for a cesarean section with sterilization, and I readily acquiesced because of her previous experiences, the family history, and the size of the varicose veins in the vagina. Although, according to the menstrual history, the date of confinement was Nov. 22, 1925, the baby appeared very large early in November and so, November 9, I performed a Porro cesarean section. Procaine hydrochloride solution was used except for the delivery of the baby by version and extraction, for which some ethylene was given. This was necessary because the baby weighed 4,790 grams (10 pounds 9 ounces). Ethylene was not given after the delivery of the baby. The incision in the uterus was a longitudinal one, partly in the lower uterine segment and partly in the corpus. It was not my intention to remove the uterus; but there were so many large blood sinuses, the bleeding from which was difficult to control, that the corpus was amputated. The patient and baby left the hospital in good condition on the thirteenth day after operation.

CASE 2.—Mrs. S. L., a nonipara, aged 33, who had had eight spontaneous deliveries, began to menstruate for the last time, April 28, 1925. She was only 5 feet 3 inches (160 cm.) tall, but weighed 230 pounds (104 Kg.). The pelvic measurements were normal but she had a pronounced cystocele and rectocele and the cervix was badly lacerated. During the evening of Jan. 26, 1926, labor pains began and the patient left for the Chicago Lying-In Hospital. On the way to the hospital the automobile in which she was riding collided forcibly with another and she was thrown back on the seat and fainted. On admission to the hospital, the patient, whose skin and mucous membranes were almost white, held her hands on her abdomen, and kept moaning that she had constant pain in the abdomen and that she was dying. The pulse rate was 104 a minute; the blood pressure, 100 mm. systolic and 70 mm. diastolic, and the urine negative. The abdomen was enormously distended and very tense. No intermittent uterine contractions could be felt. The uterus could not be outlined, nor could fetal parts be felt. Heart tones could not be heard, although the patient said she felt the baby before the automobile accident. On rectal examination the cervix was found to be dilated 2 cm. and the fetal head was high up. When the head was pushed up higher, old serum escaped from the vagina. Before this no blood had been visible at the vulva. A diagnosis of abruptio placentae, or partial rupture of the uterus, was made. A quart of saline solution was given subcutaneously, the patient's blood was matched for transfusion, and preparations were made for laparotomy. Morphine, ¼ grain (16 mg.), and an ampule of digalen were given hypodermically. With the patient under procaine hydrochloride anesthesia, I opened the abdominal cavity and found a moderate amount of bloody fluid in the peritoneal cavity. The uterus presented the appearance of uteroplacental apoplexy. There were hemorrhages within the uterine wall and there was also a hematoma in the left broad ligament, approximately 6 by 4 by 4 cm. The peritoneal reflection of the bladder was cut transversely, and the bladder stripped partly off the lower

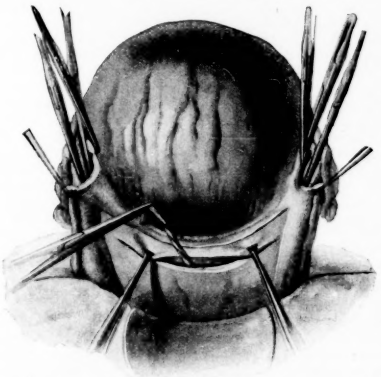

Fig. 4.—After the baby has been delivered, the placenta and cord are left in the uterus, clamps are applied to the edges of the incision, and the uterus is brought out of the abdominal cavity. This must be done gently or pain will result from pulling on the peritoneum. The ligatures and clamps shown here are applied to the round and broad ligaments. The adnexa are not removed.

uterine segment. A longitudinal incision was made in the upper part of the lower uterine segment and later extended into the lower part of the corpus. When the uterus was opened a very large amount of dark blood and blood clots escaped from the wound. The placenta, which was entirely free, also presented itself in the uterine incision. The clots and placenta were removed, and the child was delivered by

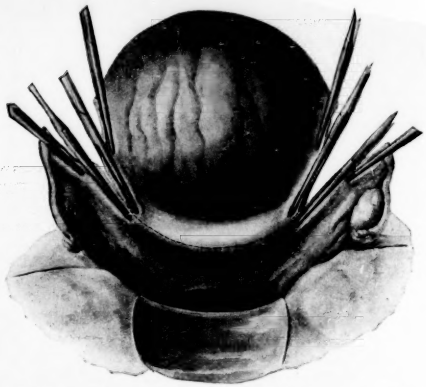

Fig. 5.—Posterior view of uterus: Clamps have been applied to the broad ligaments down to and including the uterine arteries. The dotted line represents the line of incision on the posterior wall of the lower uterine segment and the peritoneum covering it. The elevation of the peritoneum resulting from the injection of procaine hydrochloride solution is easily seen. Likewise the edema due to the procaine hydrochloride in the broad ligaments is distinct in the region of the clamps.

version and extraction. This was difficult because the baby had rigor mortis, and owing to this difficulty a few whiffs of ethylene were given during the delivery, but none afterward. In spite of solution of pituitary and ergot the uterus remained flabby, so it was decided to perform a hysterectomy especially because there was a hematoma in the left broad ligament and the patient had six living children. The edges of the uterine incision were clamped together and the uterus was removed at the level of the lower uterine segment. The left tube and ovary were also removed because of the hematoma. The source of the hematoma was found to be a bleeding vessel in the left broad ligament high up near the pelvic wall. Control of this vessel was the only difficulty encountered in the operation. At the end of the operation the patient's pulse was 90 a minute, but the next day it was 120 a minute and the temperature rose to 101.6 F. The medical consultant made a diagnosis of lobar pneumonia of the lower lobe of the left lung, toxic myocarditis and secondary anemia. Because of the pulmonary and cardiac conditions, a blood transfusion which had been planned was not given. The abdominal wound healed by first intention, but convalescence was prolonged because of the respiratory condition. The patient left the hospital twenty-one days after admission.

CASE 3.—Mrs. M. C., a tertipara, aged 36, had been delivered with forceps in August, 1921, after a very long and excruciatingly painful labor. The obstetrician who delivered her baby told her that she would need a cesarean section if she ever became pregnant again. During her second pregnancy she came to me, but since I could not find any reason for a cesarean section other than the history, I refused to promise an abdominal operation and satisfied the patient by saying that if, after a fair test of labor, delivery did not take place, a cesarean section would be performed. The last menstrual period began, May 3, 1923; hence the child was due, Feb. 10, 1924. February 1, because the baby was large, the patient was advised to take castor oil and quinine, but after 5 grains (0.3 Gm.) of quinine had been taken, pronounced symptoms of quininism appeared. Hence no more quinine was taken. Labor began spontaneously, February 13. From the beginning the pains were unusually strong and painful. The patient was given morphine and scopolamine twice but with little effect. She screamed most of the time. After seventeen hours of strong labor pains, which recurred every two minutes, the cervix was thick and dilated only 3 cm., and the head was floating. The patient was delirious, and the question of delivery came up. The fetal heart tones varied from 88 to 152 a minute. Dr. De Lee, who saw the patient in consultation, suggested that a colpeurynter be inserted. This was done, but in spite of the persistence of strong pains absolutely no progress was made. After three hours it was decided to terminate labor by some form of vaginal delivery. While preparations were being made, the patient gave vent to a piercing shriek and the colpeurynter shot out of the vagina. Bleeding followed. Examination revealed a laceration on the left side of the cervix up to the broad ligament and a small laceration on the right side. The latter was extended with scissors and the child, which was in an occiput left posterior position, was delivered with the Kielland forceps. The lacerations and incision in the cervix were repaired. The baby, which weighed 4,180 Gm. (9 pounds 3 ounces), was asphyxiated but easily resuscitated. The patient and baby left the hospital on the eleventh day.

The patient returned to see me, Oct. 2, 1925, again pregnant. The last menses began, April 16, 1925. Once more I refused to promise a cesarean section without a test of labor. The expected date of confinement was Jan. 23, 1926, but labor did not begin until January 26. As in the two previous labors, the pains were strong from the beginning. Two doses of morphine, magnesium sulphate and rectal analgesia were given but with very little effect. After twenty-one hours the cervix was thick and dilated less than 3 cm. The patient became delirious, and I decided to perform a cesarean section. The husband insisted on sterilization, and the patient had asked for this if a cesarean section was to be performed. Under procaine hydrochloride anesthesia a Porro operation was done. The incision in the lower uterine segment was made transversely. Difficulty was encountered in stripping the bladder off the left side of the lower uterine segment because of dense adhesions. The latter most likely followed the extensive laceration of the lower uterine segment in the previous labor.

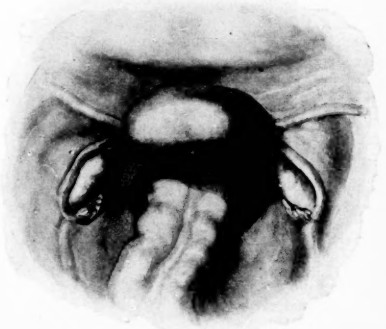

Fig. 6.—After the lower uterine segment has been sutured, the round and broad ligaments are sewed to it, and the entire mass is covered with the peritoneal flap of the bladder, as shown in this illustration.

The baby weighed 4,055 Gm. (8 pounds 15 ounces), and for its delivery a few whiffs of ethylene were given. The convalescence was undisturbed, and mother and baby left the hospital on the twelfth day after operation.

CASE 4.—Mrs. C. B., a tertiodecipara, aged 41, was brought to the Chicago Lying-In Hospital by a midwife, Aug. 1, 1927, because of profuse bleeding. The patient's last menstrual

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period began, January 12. She was perfectly well until five hours before admission, when she began to bleed profusely. The midwife and a physician examined the patient vaginally at home and made a diagnosis of placenta praevia. When the patient was admitted to the hospital, the pulse was 114, the temperature 99.6 F., and the blood pressure 150 systolic and 92 diastolic; the urine contained 3 plus albumin. No labor pains were present, and the bag of waters was intact. The uterus was normal in consistency, the child, which was small, was in the left occiput transverse position, and the heart tones were 148 a minute. Blood was escaping from the vagina. On rectal examination, the cervix was found to be dilated approximately 2 cm. and no evidence of placental tissue was found. When the fetal head was pushed upward there was a sudden gush of blood from the vagina. A diagnosis of abruptio placentae was made and laparotomy decided on. I made a transverse incision in the lower uterine segment, and when the uterus was opened about 300 cc. of dark blood and blood clots was found in the uterine cavity. The child, which was alive but premature, was easily delivered. Because the patient was 41 years of age and had ten living children, and because she had been examined vaginally at home by a midwife and a physician, the uterus was removed. This was readily performed by continuing the transverse incision already made in the lower uterine segment. The abdomen was closed as usual. No anesthetic other than procaine hydrochloride was used, and only 6 ounces (180 cc.) of procaine hydrochloride solution was used in this operation, which lasted exactly one hour. The baby died a few hours after birth, but the patient made an uneventful recovery and left the hospital on the eleventh day after operation.

426 East Fifty-First Street.

SCHISTOSOME DERMATITIS IN THE UNITED STATES (MICHIGAN)*

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For a number of years, cases of dermatitis of unknown etiology have developed at the University of Michigan Biological Station on Douglas Lake, Mich., in persons who have waded in certain places for the collection of biologic specimens. A similar condition has also been noted at certain summer resorts in the same general region. While there has been a considerable amount of speculation and some experimentation on the cause of this dermatitis, the first definite evidence was obtained during the past summer, when lesions similar to those contracted from wading were produced experimentally by placing on the surface of the skin schistosome cercariae belonging to a species described by Miller [1] in 1923 as *Cercaria elvae*. While it has not been established that this cercaria is the only factor in the production of the dermatitis of the region, the evidence available indicates that it is an important causative agent.

The discovery of this relationship came as the result of an accident. On the morning of July 16, 1927, I collected a number of snails from the north shore of Douglas Lake and brought them to the Biological Station in a bucket containing about 10 inches of water. Later in the day I picked the snails out of the water a few at a time to sort them into the different species. In this sorting my left hand was brought constantly into contact with the water in the pail, and after about ten minutes a severe prickling sensation, resembling the bites of small insects, was felt on the back and sides of the wrist. The hand and wrist were immediately washed with strong soap and bathed in alcohol. Within a few minutes localized urticaria-like blotches had developed over the whole affected area. This condition subsided in about half an hour, leaving only a number of minute macules. During this stage there was very little itching and nothing further was noted until about 1 a. m. the next morning, when intense itching developed. The next day the lesions had become prominent papules, and the itching continued, becoming almost unbearable whenever the wrist became warm. By the second night, the hand and wrist were swollen and painful and the papules had become definitely pustular. The condition was at its worst from about forty-eight to seventy-two hours after exposure and appeared as shown in the accompanying illustration. After four days the swelling had almost disappeared, and after five days the itching became much less and the pustules began to dry up. After this the wrist rapidly cleared, and no more difficulty was experienced. The course of the dermatitis in this case was typical of that contracted from wading in certain places in this region, except that in most of such cases only the ankles were involved.

Pustular lesions, forty-eight hours after infection, produced by penetration of schistosome cercariae from the water of a pail containing snails.

Since the cause of the dermatitis in this particular case was localized in a pail of water containing snails, and since a number of species of cercariae which are known to penetrate actively into different animals are present in the snails of this region, it was immediately suspected that some cercaria might be the penetrating agent. The snails were therefore isolated in separate wide mouthed bottles in fresh well water, and it was later found that large numbers of schistosome cercariae were issuing from three of the snails belonging to the species *Lymnaea emarginata-angulata* Sowerby. No other trematode larvae were found in this particular lot of snails. These cercariae were identified as belonging to the species *Cercaria elvae* Miller 1923, a form which was originally found and described in this locality and which is known to be fairly common and widespread in the region. Some of these cercariae were placed on the back of my wrist. As the water dried the prickling sensation was experienced, followed by the

* This paper is a joint contribution from the University of Michigan Biological Station and the Department of Helminthology of the Johns Hopkins University School of Hygiene and Public Health.

1. Miller, H. M.: Notes on Some Furcocercous Larval Trematodes, J. Parasitol. **10**: 35 (Sept.) 1923.

local urticaria-like blotches. The same condition developed as that described before, except that there was no general swelling and only part of the papules became pustular.

Later in the summer further experiments were made on the application of *Cercaria elvae* to the human skin, in which cercariae from a total of eight different snail hosts were used, two of which belonged to the species *Physa parkeri* Say. In all, seven different persons were exposed to penetration. In five of these the prickling sensations were reported, and typical lesions developed at every application of the cercariae. In most instances, however, when only a few cercariae were applied there would not be any urticaria-like blotches and swelling would not develop, and in many instances the papules did not proceed to the pustular stage. Two of the seven volunteers did not experience any effects whatever from the application of the cercariae to the skin. As a final test, these two refractory persons were tested with a very large number of cercariae under the conditions which had been found to be most favorable for penetration. They reported no prickling sensations and there was no effect whatever, although a few of the same cercariae placed on my own wrist at the same time under identical conditions gave the typical prickling sensation, urticarial blotches and papules, which in two spots caused considerable itching and became pustular. Apparently, for some unknown reason, the cercariae would not even penetrate into the skin in these two cases. In one of the other persons, although the prickling sensation was reported, there was very little itching and the papules were small and cleared up quickly.

Several other points of interest were noted in connection with these experiments. It was observed that each lesion had its center in a hair follicle, and when single cercariae in isolated drops of water were applied some of them produced papules centering in a hair follicle. Lesions were not produced by placing the cercariae on the under side of the arm where no hair was present, and no penetration was obtained from large numbers in the palm of the hand.

The variations in the course of this dermatitis need further comment. The production of the urticarial blotches is probably related both to individual susceptibility and to the number of cercariae which penetrated, since in some persons they did not occur at all. In my own case a very few cercariae did not produce this condition, although I was apparently the most susceptible of all those exposed experimentally. It further seems possible that the pustular condition is due to secondary bacterial infection; i. e., to bacteria introduced at the time of the penetration of the cercariae or from later scratching. In the lesions produced by wading, the pustules were almost always similar to those shown in the accompanying illustration when the cercariae penetrated from dirty water containing a considerable amount of organic sediment. In the experimental exposures the cercariae were in clean well water which in certain cases had been repeatedly changed, and in many instances the papules did not become pustular.

Only one other species of schistosome cercaria, *Cercaria elephantis* Cort [2] 1917, was found in the summer of 1927. Repeated applications of this cercaria to the skin of persons who were susceptible to penetration by *C. elvae* did not produce any effect.

The experiments outlined have demonstrated that a definite dermatitis can be produced by the application to the human skin of the schistosome cercaria *Cercaria elvae*. It remains to discuss the probable relationship of this cercaria to the dermatitis obtained by wading in certain places in the region of the Michigan Biological Station. Most of the worst cases have been contracted from wading in a small beach pool called Sedge Pool, located on the north side of Douglas Lake. The malady has therefore come to be known as "Sedge Pool itch." Definite records are also available of the contracting of Sedge Pool itch from at least three other places in the same vicinity. All of these places have the common feature that the water is shallow and the bottom muddy with a large amount of organic material, and that there is present an abundant snail fauna. *Cercaria elvae* and a closely related species have been collected from three of these places, while no examination of the snails for cercariae has been made from the fourth. While definite records have not been kept of the occurrence of the cases of Sedge Pool itch, it seems to have been noticed practically every year. During the summers of 1914, 1915, 1916 and 1920, I contracted it at least once each season either on the ankles or wrists from collecting in Sedge Pool. Almost all the cases develop on the ankles or legs. In 1916, practically the whole class in invertebrate zoology developed severe cases after a morning spent collecting in this pool. The worst cases that have been noted occurred during the summer of 1924 in two girls, who spent most of a day collecting in bathing suits at the mouth of a small creek entering Burt Lake. In these cases, the lesions covered the legs from the ankles to the middle of the thighs. The patients were prostrated for several days, the legs were very painful and much swollen, and large numbers of the pustules appeared. The itching was so intense that even with the constant application of cooling lotions the patients were able to obtain little sleep for the first few nights. In another case contracted in 1920 from Sedge Pool, 147 papules were counted on one leg between the knee and ankle and seventy-seven on the other.

While we cannot, of course, be sure that all the cases of dermatitis which have developed in the region of the Biological Station from wading have a common cause, the history and development of the lesions in all the cases of Sedge Pool itch that I have observed in myself and in others in the camp are so similar that it seems reasonably certain that we are dealing with a clinical entity. This is also the opinion of the two camp physicians who served during this period and who have observed cases both in the students of the Biological Station and in those of the University of Michigan Engineering Camp, which is near by.

A typical case of Sedge Pool itch shows the same course as the infection from the pail of snails already described. The lesions are also the same as those obtained experimentally by the application of *Cercaria elvae* to the skin. It therefore seems almost certain that Sedge Pool itch is produced by the penetration of schistosome cercariae into the skin. I shall therefore refer to this infection as schistosome dermatitis, including in this term both the naturally acquired and the experimental dermatitis.

The following factors seem to influence the severity and the course of development of the lesions in cases

2. Cort, W. W.: Homologies of the Excretory System of the Forked-Tailed Cercariae, J. Parasitol. **4**: 48 (Dec.) 1917.

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of schistosome dermatitis; viz.: (1) the number of cercariae which penetrate the skin; (2) the character of the water from which they penetrate, since it seems possible that penetration from dirty water with the introduction of bacteria may produce the pustular condition; (3) the scratching of the papules, which usually produced secondary infection, and (4) the susceptibility of the individual. It is of interest to note in connection with the fourth of these points that the same differences in susceptibility were shown in the naturally contracted as in the experimental cases. This was strikingly illustrated by two assistants who spent a morning seining in the mouth of a creek flowing into the lake. With the same exposure, one developed a bad case of the dermatitis while the other showed practically no effect from the exposure. Also one of the persons refractory to the experimental infections had waded a number of times in Sedge Pool without effect, while others with much less exposure contracted Sedge Pool itch.

Since nonhuman schistosome cercariae are undoubtedly of widespread distribution, it seems possible that further studies will show that schistosome dermatitis is quite a widespread condition, especially in summer resort populations. In fact, reports have come in from several summer resorts in the same general region of the development of a condition resembling the Sedge Pool itch from wading or swimming. In some of these places, at least, the reports indicate that the infection came from shallow water with a muddy bottom.

While *Cercaria elvae* is the only form so far implicated, it seems probable that other related schistosome cercariae might also penetrate into the human skin and produce similar lesions. There is not the slightest evidence that this cercaria or related forms could develop to maturity in man, and the severity of the skin reaction may be due to some extent to the overwhelming of the cercariae in the tissues of a host in which further development is not possible. The definitive host and further development of *C. elvae* is not known. It probably develops in some mammal, since it is very similar in structure to the cercaria found near Boston, which Tanabe [3] found developed in laboratory mice into an adult blood fluke to which he gave the name *Schistosomatium pathlocopticum*.

It is of interest to note in this connection that some authors have reported a dermatitis from the penetration of the human schistosomes. A great deal of consideration has been given to this question in connection with studies in Japan of the relation of kabure, a rice field dermatitis, to the penetration of the cercaria of *Schistosoma japonicum*. Kabure comes after the farmers enter the water of the rice fields. An itching sets in soon after the exposure to the water and becomes very intense at night. Small pimples appear, which usually disappear in a few days but may become papular and pustular. I saw a case of kabure in May, 1924, in the Katayama district near Okayama, Japan, and was struck with the remarkable similarity between the lesions and those of Sedge Pool itch. Dr. S. Yokogawa, who was at the University of Michigan Biological Station in the summer of 1920, also remarked on the similarity of the lesions in the two conditions. Narabayashi [4] produced on himself by the penetration of cercariae of *S. japonicum* lesions which he interpreted as kabure, and a number of Japanese workers consider kabure to be the first symptom of schistosomiasis. Another group of Japanese workers, led by Miyagawa,[5] have opposed this view. Recently, Faust and Meleney [6] have discussed this question and, since they do not find any dermatitis resembling kabure associated with schistosomiasis in China, they are inclined to accept the view of Miyagawa that kabure has not been demonstrated to be a result of the penetration of the cercariae of *Schistosoma japonicum*. It seems quite certain, however, that sometimes definite papular lesions are produced by the penetration of the human schistosomes. The reason a definite dermatitis cannot be associated with the penetration of the cercariae of the human schistosomes in so many cases is probably that such infections usually occur by the penetration of a few cercariae at a time. In the same way, it is only under unusual circumstances that ground itch can actually be recognized as a first symptom of hookworm infection, and in many places in which hookworm is prevalent it is practically unknown. There are also the factors of introduction of bacteria and susceptibility to be considered. It may also be, as suggested before, that part of the severity of the condition produced by the penetration of *Cercaria elvae* is due to the reactions of an abnormal host.

The finding of a species of nonhuman schistosome cercaria that can penetrate into the skin of man and produce lesions adds interest to this group from a new angle. Miller,[7] in a recent comprehensive monograph, lists a total of twenty-six known cercariae in the family *Schistosomatidae*. Of these, the further development of only five is known, including the three human forms. Seven of these forms, all nonhuman species, have been reported from the United States, and since only a few studies have been made of cercariae in this country it is probable that they represent only a small part of those actually present. It is evident that further studies are badly needed on the possibility of penetration into the human skin of the various species of schistosome cercariae, and the relation of this penetration to the production of lesions. I hope to be able to continue this work further by experimenting with other species of schistosome cercariae and by studying the condition further in the Douglas Lake region, and I would be glad to hear from physicians who have had experience with forms of dermatitis which might be of similar origin.

SUMMARY

1. A species of schistosome cercariae *Cercaria elvae* was found to penetrate into the human skin and produce definite lesions of a papular and frequently pustular nature.

2. This schistosome dermatitis was identified as the same condition as that contracted by wading at certain places near the University of Michigan Biological Station at Douglas Lake, Mich., where this and similar schistosome cercariae were known to be present.

3. It is suggested that a dermatitis produced by the penetration into the human skin of nonhuman schistosome cercariae may have a widespread occurrence, since cercariae of this type have a wide distribution.

615 North Wolfe Street.

3. Tanabe, B.: The Life History of a New Schistosome, Schistosomatium Pathlocopticum Tanabe, Found in Experimentally Infected Mice, J. Parasitol. **9:** 183 (June) 1923.

4. Narabayashi, H.: Contributions to the Study of Schistosomiasis Japonica, Kyoto Igakai Zasshi, **13** (numbers 2 and 3) 1916; Japanese text cited from Faust and Meleney.

5. Miyagawa, Y.: Beziehungen zwischen Schistosomiasis japonica und der Dermatitis, Centralbl. f. Bakteriol. I Orig. **89:** 132, 1913.

6. Faust, E. C., and Meleney, H. E.: Studies on Schistosomiasis Japonica, Am. J. Hyg. Mon. Series 3, March, 1924.

7. Miller, H. M.: Comparative Studies on Furcocercous Cercariae, Illinois Biol. Monograph **10,** number 3 (July) 1926.

OLECRANON BURSITIS

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Olecranon bursitis is considered a rare condition except in those localities where mining is an important industry, which fact has given to it the name of "miners' elbow." Little has been written on this subject, and many features of the condition are overlooked. As a result, complications develop which are to be discussed in this article. Within a period of one year we have observed fifteen cases.

ANATOMY

In the region of the olecranon there are located three distinct bursae: (1) a large subcutaneous bursa lying directly beneath the skin, which when fully distended measures about 2½ inches in length, three-fourths inch in width and is of varying thickness, with the upper half lying above the tip of the bone and the remaining portion firmly attached to the underlying periosteum; (2) a small bursa which is not easily demonstrable within the tendinous attachment of the triceps, and (3) a slightly larger bursa underneath the tendinous insertion of this muscle.

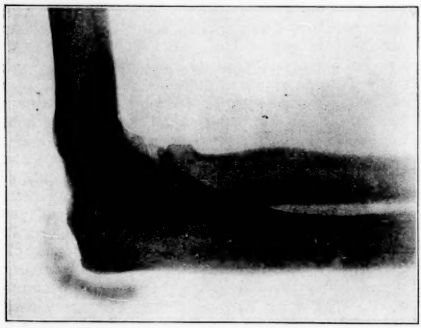

Fig. 1.—Roentgenologic aspect of an acutely distended bursa injected with sodium bromide prior to removal.

In view of the fact that the olecranon process is so superficially located, that the cortex of the bone is extremely thin and also that the cells are of a cancellous nature, we believe that these bony cells are frequently injured at the same time that the injury to the bursa itself occurs. The close proximity of the large subcutaneous bursa to the elbow joint itself is to be remembered, as it is separated from the articulation itself only by the posterior portion of the orbicular ligament, and in one of our cases was seen to communicate directly with the joint. This may be easily understood when the embryologic development of these structures is considered.[1]

The accompanying roentgenogram (fig. 1) illustrating the anatomy of the subcutaneous olecranon bursa in the living subject was made by injecting an acutely distended bursa with sodium bromide prior to its removal.

1. Lasher, W. W.: Study of Cartilage Injuries, J. Bone & Joint Surg. **8**: 651 (July) 1926.

PATHOLOGY

Frequently at the time of the original injury a very superficial abrasion or a laceration of the skin occurs. This affords a portal of entry for a low grade infection, and the synovial fluid in the distended bursa affords an excellent cultural medium for the slow proliferation of the invading organism, so that as late as three weeks after the receipt of the trauma we have noted an acute recurrence of symptoms in cases we considered as being cured. Roentgenograms made at this time show a beginning necrosis of bone, whereas pictures made immediately following the injury do not show any bony pathologic change.

Repeated aspirations through this traumatized area or a small inadequate incision may also provide a portal of entry for an infection such as has been described. An operation which does not completely remove the secreting lining of the bursa in a short time forms a sinus which drains clear synovial fluid. Unless the greatest care is exercised in subsequent dressings, this sinus will soon become infected.

We have noted in removing these bursae that the posterior wall appears to be much thicker where it is closely adherent to the periosteum. This may be explained by the fact that the tissue in this area was more severely traumatized by the original injury or harmed by an aspirating needle.

The occurrence of an osteomyelitis as an almost invariable complication does not seem to require any further explanation when one considers the close proximity of injured bone cells to the bursal infection.[2] When a bursa is distended with pus, we believe that the most natural site of extension would be at its bony attachment.

REPORT OF CASES

CASE 1.—T. L., aged 67, an engineer, stated that on Oct. 7, 1926, he struck his left elbow against the edge of a concrete mixer and received a lacerated wound. In forty-eight hours marked swelling and redness developed, but he continued working eight days. October 29, a phlebitis developed in the axillary vein. He was admitted to the hospital and the wound was treated with wet dressings. Roentgenograms were negative.

November 8, an exacerbation of the condition arose, and he was readmitted to the hospital, where it was found that an osteomyelitis had developed and that there was a direct extension leading into the elbow joint. Cultures showed *Staphylococcus aureus*. A large bursa was removed, the bone curetted and the area phenolized. The patient left the hospital, November 9, and returned to work one month later, the wound being completely closed. Disability in this case was approximately three months.

CASE 2.—F. H., aged 50, a printer, stated that on May 25, 1926, he fell, striking his left elbow. There was a lacerated area. Roentgenograms did not show any fracture. In thirty-six hours a marked swelling and redness developed; two weeks later the area was incised, and on August 6 a roentgen-ray examination showed a beginning osteomyelitis. A diseased bursa was resected, the bone curetted and the area phenolized. A sinus continued to discharge small fragments of bone until November 29. The wound closed and the patient returned to work, Jan. 7, 1927, the disability period having been more than seven months.

CASE 3.—J. G., aged 49, a plumber, stated that on August 19 he struck his right elbow. A slight skin infection developed which was treated with wet dressings. September 11, there was a recurrence of the condition, and a small incision was made. This drained synovial fluid, and portions of the bursa were slowly sequestrated. Roentgenograms were negative. The bursa was resected and an area of bare bone showing a beginning osteomyelitis was found. The bone was curetted,

2. Rose and Carless: Manual of Surgery, ed. 10, New York, William Wood & Co., p. 482.

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and the area phenolized. He returned to work, October 15, the disability period having been more than two months.

These three cases serve as an illustration of the facts already pointed out under the heading of pathologic changes, i. e., that there is a superficial infection which develops in a few weeks into a bursitis that later develops into an osteomyelitis.

CASE 4.—A. M., a laborer, stated that on November 17 he fell from a scaffold and struck his right elbow. A superficial laceration occurred; forty-eight hours later an acutely inflamed bursa was aspirated. This was repeated four or five times, until on November 30 he was admitted to the hospital. An infected bursa was resected and the area of its attachment phenolized. In one week the wound was completely healed, and in two weeks the man returned to work, the disability period having been one month, or two weeks from the date of operation.

CASE 5.—A. H., aged 26, an iron worker, stated that on October 12 he struck his left elbow against a beam; there was a superficial laceration of the skin. November 19, he was seen with an acutely inflamed bursa, which was immediately removed and the area of its attachment phenolized. In one week the wound was completely healed, and one week later he returned to work, the disability period being one and one-half months, or two weeks following the date of operation.

There was a complicating neuritis of the ulnar nerve which was not of any consequence.

Fig. 2.—External appearance of bursa, with line of incision indicated.

These cases will serve as an illustration of what we believe to be the proper treatment of acutely distended bursae.

TREATMENT

As has been said, the earliest possible removal of the bursa is indicated. This cannot be done through small incisions, but requires an incision at least 2 inches in length, which should be longitudinally placed and not transversely, as was seen in one of our cases not reported in this article. The incision should be slightly elliptic so as not to leave a scar directly over the olecranon (fig. 2). It is better to curve the incision so that the flap is toward the radial side, as the ulnar nerve will thus be less likely to be injured. As there is great difficulty in separating the attached portion of the bursa without opening the periosteum, we believe that this small area should be thoroughly curetted and phenolized in order to destroy any secreting cells and to remove completely the infected tissues, and the wound closed without drainage. A tight bandage should be applied with pressure over the bursal site to prevent reaccumulation of fluid. No splinting is required, and motion should be started immediately following the operation and kept up until the date of discharge. In our experience, when an existing osteomyelitis has been thoroughly curetted, there has not been any delay in the closure of the wound, with a single exception, because of the existing bone condition.

CONCLUSIONS

1. The olecranon bursa is much larger and more extensive than is usually considered.
2. An acute infection of this structure demands an early operation with complete removal.
3. If an operation is not performed for the condition, an osteomyelitis of the underlying bone is a most frequent complication.
4. Patients seen early and operated on immediately make a rapid and complete recovery.

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Clinical Notes, Suggestions and New Instruments

A NEW TECHNIC FOR ADMINISTRATION OF RECTAL ANALGESIA IN OBSTETRICS

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Rectal analgesia as introduced by Dr. J. T. Gwathmey and perfected at the New York Lying-In Hospital has become generally accepted as a valuable analgesic in labor. However, it seemed desirable to simplify the technic of administration of the rectal medication, and by so doing make the procedure even more popular.

The apparatus needed for the rectal instillation according to the original technic was a funnel and a catheter. The gravity flow through this apparatus was often too slow, so that it was frequently necessary to accelerate the rate of flow by "milking" the tube between the thumb and the fingers. This sometimes caused spilling and loss of part of the medication and was a bit mussy and troublesome. The new apparatus worked out at the Coleman Hospital for Women, in conjunction with the Eli Lilly Company of Indianapolis, overcomes this disadvantage.

In the accompanying illustration *A* is an ordinary number 22 French catheter; *B* is a double ended glass ampule containing 1 ounce (30 cc.) of heavy liquid petrolatum which is stoppered with corks at each end and sealed with gelatin caps; *C* is a rubber connecting tube; *D* is a double ended metal ampule containing the ether mixture, and *E* is an ordinary pressure bulb.

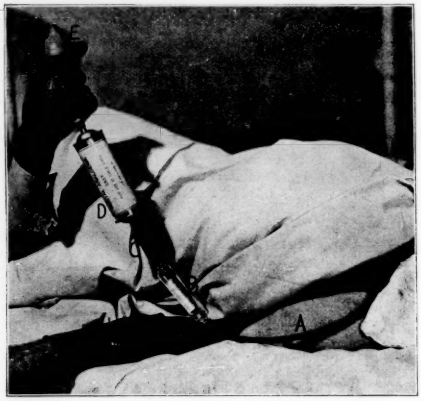
The assembling of the apparatus is simple. The catheter is first clamped with a hemostat. The oil ampule, rubber connecting tube, metal ampule and pressure bulb are strung up in the order named after the corks have been removed one at a time from the glass ampule and after the soft metal ends of the tin ampule have been punctured one at a time. The apparatus should be held bulb end up to prevent mixing of the petrolatum in the glass ampule with the contents of the tin ampule above. If held upright, the rectal mixture in the upper ampule will run down the tube and stratify on top of the petrolatum without mixing. The hemostat is released for a moment to expel the air from the catheter, and then clamped again. The catheter now is ready to be inserted into the rectum so as to go above the presenting part, and the petrolatum and rectal mixture are pumped into the rectum in the order named by means of the pressure bulb.

With the old technic the rectal mixture was preceded and followed by an ounce of liquid petrolatum, the ether mixture thereby being "sandwiched" in oil to prevent irritation of the rectal mucosa. I found, prior to designing this new apparatus, that the last ounce of petrolatum was unnecessary. If the oil-ether mixture is preceded by an ounce of petrolatum, no more irritation occurs than when it is both preceded and followed by the petrolatum. The omission of the last ounce of petrolatum also has the advantage of decreasing the bulk of the instillation from 6 ounces to 5 ounces (180 to 150 cc.), the smaller amount being more easily retained

than the larger. This accounts for the fact that in the new technic only the ounce of petrolatum before the oil-ether mixture is given, in contrast to the former "sandwiching" technic.

In addition to simplifying the technic of administration, it was deemed necessary to design a container for this oil-ether mixture that would not leak. While rectal analgesia was perfected in a highly organized maternity hospital, the purpose of those doing the work was to evolve a procedure that could be used by the general practitioner in the home instead of being limited to the hospital practice of those especially trained in its use.

Therefore it was essential that the oil-ether mixture should be put up in a container that could be carried in the obstetric bag without breaking or leaking. Up to the present, the only containers available were cork or rubber stoppered bottles. The chief disadvantage of this was that the ether in the bottle vaporized at room temperature and pushed the stoppers out of the bottle. This caused leakage and loss of ether, so that a satisfactory analgesia was not obtainable because the mixture was low in ether content. The new tin ampule designed as the container for the oil-ether mixture is sealed at both ends with soft metal similar to that used to cap the ordinary ether



Apparatus in use.

can. This all-metal container is ether tight, and so can be placed in an obstetric bag and carried for any reasonable length of time without deterioration.

The tendency while giving the rectal instillation with this new apparatus is to pump the mixture in too rapidly because of the ease of administration. It should be remembered that too rapid injection will cause the mixture to be expelled rather than retained. We have found that if two minutes is allowed for the injection, the medication will be retained.

After thorough clinical trial, this new apparatus for the administration of the Gwathmey rectal analgesia mixture has been found to possess the following advantages:

1. Ease of administration.
2. An ether tight nonbreakable container.
3. Simplification of technic, making possible a decrease of the mixture from 6 to 5 ounces, which promotes retention of the medication.

333 Bankers Trust Building.

Ulcer Perforation.—The acute perforation of an ulcer is a terrible catastrophe. The patient is plunged at once into a condition of prostration and of unendurable agony unsurpassed, with one exception, in human experience. The pain is almost beyond description.—Moynihan, Berkeley: *Practitioner*, March, 1928.

Special Article

THE DIAGNOSIS OF PULMONARY TUBERCULOSIS FOR THE GENERAL PRACTITIONER

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In this paper I discuss eleven theses, which may be stated thus:

1. Pulmonary tuberculosis is still by far the most frequent chronic pulmonary disease, if not the most frequent of all pulmonary diseases.
2. It is no less important to bear pulmonary tuberculosis in mind than it is to have the possibility of syphilis always before one.
3. Familiarity with the patient is often misleading.
4. Intimate exposure, whether at home or elsewhere, especially in infancy, childhood and young adult life, demands careful consideration.
5. In diagnosis, the localizing symptoms far outweigh the general or constitutional symptoms.
6. The two symptoms most important in diagnosis are hemoptysis and pleurisy with effusion—when neither is attributable to any other cause.
7. The occurrence of fine or moderately coarse persistent râles above the third rib and third vertebral spine is the most characteristic sign noted at physical examination.
8. Characteristic fine or coarse mottling occurring above the third rib and fifth vertebral spine on a well taken roentgen-ray film is a typical observation in pulmonary tuberculosis.
9. The presence of tubercle bacilli in the sputum is as important in diagnosis today as it was forty-six years ago.
10. Once the diagnosis has been established, the determination of activity rests largely on the presence of general or constitutional symptoms.
11. It is as important to be able to exclude as to be able to confirm the presence of pulmonary tuberculosis, but exclusion is many times more difficult.

FREQUENCY OF PULMONARY TUBERCULOSIS

I have said that pulmonary tuberculosis is the most frequent chronic pulmonary disease, if not the most frequent of all pulmonary diseases. Pneumonia, it may be recalled, leads tuberculosis as a cause of death; but the seasonal incidence and the short duration of this acute disease, which lasts only a few weeks, whereas pulmonary tuberculosis lasts on an average five years, as well as the fact that a certain number of patients with pulmonary tuberculosis die from other diseases, all help to make the latter the most frequent of all pulmonary diseases. I have wondered from time to time whether the modern treatment of tuberculosis has not increased the number of potential carriers of tubercle bacilli, for some of them, as I have indicated, live to die from other causes.

SYPHILIS AND TUBERCULOSIS

I have often wondered whether it might not be a good thing for every physician to have on the walls of his office a sign which would read: Remember syphilis and tuberculosis. These are the two great simulators of other diseases. The parasites of each work under cover, in darkness, and, when they become easy to detect, the ravages of disease are frequently so extensive that hope of recovery is gone and only a temporary arrest is often possible. The detection of such a foe demands all the diagnostic acumen that one can com-

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mand and, indeed, only when it is kept constantly in mind can it be detected early.

CARELESSNESS RESULTING FROM FAMILIARITY

The fact that one knows the family, and that one has followed the patient from the time he, as a future aspirant for immortality, met his first obstacle in the form of the pelvis until the present, is no evidence that he does not have tuberculosis. Familiarity does not beget immunity. The disease may strike at any one of our families. They are no more above suspicion of pulmonary tuberculosis than the righteous of today are free of the syphilitic toll exacted by the indiscretions of yesterday. Physicians are indeed their brothers' guardians and cannot escape the penalty that the carelessness of familiarity so richly deserves.

INTIMATE EXPOSURE

The millstone of heredity which former generations hung about the neck of some of us has been largely chipped away. The work of Bang with cattle in Denmark, and that of Grancher with infants in France, have helped greatly to bring this about. Whether infants are more or less susceptible than adults can safely be left to the controversialists, but it is known that their contact with those who care for them is most intimate. For this reason they are peculiarly susceptible, and rarely escape infection if an open case of pulmonary tuberculosis is present in the home. The importance of this in diagnosis always demands consideration. But I cannot stop here, as some believe that 50 per cent of the cases of pulmonary tuberculosis in adults are due to infection or reinfection after the age of puberty. Consequently, one must seek to discover exposure to infection at any age but particularly up to the age of 25.

LOCALIZING SYMPTOMS

The propaganda concerning tuberculosis has been so widely and so intensively pushed throughout a large part of the country that many with equivocal symptoms have been led to consult physicians in regard to tuberculosis. This, no doubt, leads to the early detection of the disease but it also turns gray the hair of many physicians who have to solve the problem. Fortunately, the localizing symptoms are more important in diagnosis than the constitutional. The latter are not peculiar to pulmonary tuberculosis but occur in many conditions in which the latency may cause confusion. In these conditions the localizing symptoms, such as cough, expectoration, pleurisy and hemoptysis, focus attention on the lungs and reduce the number of confusing conditions.

PLEURISY WITH EFFUSION AND HEMOPTYSIS

If one pauses for a moment to consider the local symptoms one is struck with how frequently cough, expectoration, streaks of blood in the sputum and pain in the chest occur in all types of pulmonary disease. This renders their significance in diagnosis of far less moment. Indeed, after carefully weighing all of them, one is forced to conclude that two alone are of paramount importance in the diagnosis of pulmonary tuberculosis. I refer to pleurisy with effusion and hemoptysis of a drachm or more. Furthermore, all other causal factors must, of course, be excluded. I should like to emphasize this point. If no other causal factors are present, the occurrence of either of these two symptoms demands a diagnosis of suspected pulmonary tuberculosis until another diagnosis is made.

RÂLES

As soon as a suspicion of pulmonary tuberculosis is aroused, most practitioners are seized with a desire to try their skill in detecting abnormal physical signs. There is little need to recall that many of these cases of tuberculosis present only equivocal or, indeed, no abnormal physical signs. But fortunately for them many do, and much nonsense has been spoken and written about them. I refer now to the detection of râles by men without special training or interest along such lines. If the relative value in diagnosis of the various early abnormal physical signs is considered, one is forced to the conclusion that there is no unanimity in regard to value of the data obtained by the practice of inspection, of palpation and of percussion. None deny, however, the importance in diagnosis of the data obtained from auscultation. It remains, then, to decide what are the significant data to be drawn from the study of auscultation and whether they are difficult to elicit and to evaluate. I am speaking now of an

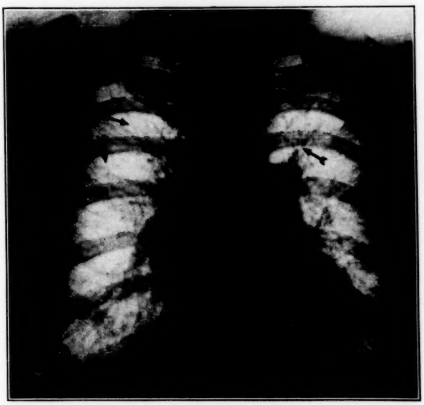

Fig. 1.—Peritruncal involvement of a few of the trunks to both upper lobes, indicated by arrows.

advancing case, one in evolution, as the French say. While changes in the type of breathing do occur not infrequently, and while the vocal resonance departs from normal in some cases, one can safely leave such changes to those who make a special study of physical signs, bearing in mind that they are not of one accord in evaluating such data. There is left then to consider only the adventitious pulmonary sounds.

Pulmonary tuberculosis may produce any of these sounds. It is of interest to recall that the science of pulmonary physical diagnosis, if such a term may be used in this connection, was developed and perfected from the study of pulmonary tuberculosis. After studying the various adventitious sounds, those of us who work at the Trudeau Sanatorium have come to the conclusion that the most characteristic abnormal physical sign in pulmonary tuberculosis is the râle, which we call the moderately coarse râle. Such râles are rarely absent when the physical signs are well developed in this disease, and they may be the only abnormal sign present. Their detection depends not on acuity of hearing but only on how to produce them.

I refer to the practice hinted at by Laënnec, and used by Flint, Trudeau and many others. This consists in having the patient give a cough, neither too hard nor too slight, and then take a moderately quick, not too full, inspiration. The râles may be heard at the end of the expiration with the cough but more often during the inspiration following the cough. It is easier to

Fig. 2.—Arrows indicate peritruncal involvement of the paravertebral trunk. This heading is more definitely seen stereoscopically. Figure 3 gives appearance of same patient sixteen months later.

show the patient what one wants him to do than to explain it to him. It should be borne in mind that if he coughs too hard he may obscure the râles by the noise of the cough. In some early cases this simple procedure is not sufficient. In these it is necessary for the patient to exhale half way, to cough with what breath is left and then to take a moderately full, moderately quick inspiration. This is really the third degree in the detection of what has been termed the occult râle. It opens up certain air passages that do not under ordinary breathing permit the passage of the air, and consequently the secretion within them can be detected only by such special means as I have indicated. If I might pause for a moment in the interest of the patient, I would call attention to the fact that these respiratory gymnastics are exceedingly fatiguing to some patients and should be employed only when râles are not heard on quiet breathing or after simple cough. I have seen a few cases in which râles were apparently to be detected only on quiet breathing.

Such râles are by no means heard only in pulmonary tuberculosis, but the frequency with which they occur at the apex is most characteristic. By "apex" I refer to that part of the lung which lies above the third rib and third vertebral spine, in reality the upper third of the lung. For such râles to be of importance in diagnosis they must be persistent and must be heard on two or more occasions. The peculiar pneumonia that occurred during the World War, influenza, and a few other conditions may produce râles in this location, but they are rare.

MOTTLING

It is a wise plan not to call any patient sound pulmonically until roentgenograms have been taken and found to be normal. But there's the rub. How is one going to define the normal? In the first place the films must be well taken, and the less the disease, the better must be the films. The general consensus is that flat films indicate more disease, i. e., suggest a greater amount of disease than stereoscopic films; or, put in another way, suggestive evidence of disease on a flat film fades into a normal picture on stereoscopic films. So in patients with early disease, only stereoscopic films are satisfactory and they should be good. When the diagnosis rests in large part on the films, they must be retaken until they are above criticism. In my work, I find that some of the plates sent me from other laboratories are totally inadequate to enable any one to exclude or to verify the presence of definite mottling. The reason for many of these poor films is the fact that the patient leaves the laboratory before the film has been developed and for some reason cannot return.

What are the minimal changes that justify a diagnosis of pulmonary tuberculosis? Here, of course, one is on debatable ground. To discuss the point in detail would take me too far afield; I shall mention therefore only the conclusions at which we have arrived after much work and study. It is perfectly possible in early pulmonary disease for the tubercles to occur along the trunks; in other words, to be arranged in a linear manner. Such an arrangement of mottling is usually spoken of as peritruncal (formerly known as peribronchial). Many patients whose roentgenograms reveal such a picture apparently never develop pulmonary tuberculosis. In fact, today one hesitates to say that they have tuberculosis. Put another way, such a picture is no longer considered as presenting conclusive evidence of the presence of pulmonary tuberculosis, even though one knows that a certain small number of these patients are definitely tuberculous or have had the disease.

Today it is demanded as evidence of the presence of pulmonary tuberculosis that the mottling assume an

Fig. 3.—Same patient as figure 2, sixteen months later. Marked development of pneumonic tuberculosis throughout.

irregular as well as a linear distribution. Of course, many other diseases produce mottling in various parts of the pulmonary films; but when rather fine mottling is found above the third rib and the fifth vertebral spine, pulmonary tuberculosis must be excluded. It is of interest to note that such mottling occurs in from 96 to 98 per cent of all patients who have tubercle bacilli in the sputum. The number of definite cases of

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pulmonary tuberculosis that occur without such mottling is so small that they hardly need be considered, but it must not be forgotten that they can and do occur.

The position of the roentgen ray in the diagnosis of pulmonary tuberculosis is not easy to determine. In the vast majority of cases it is not absolutely necessary

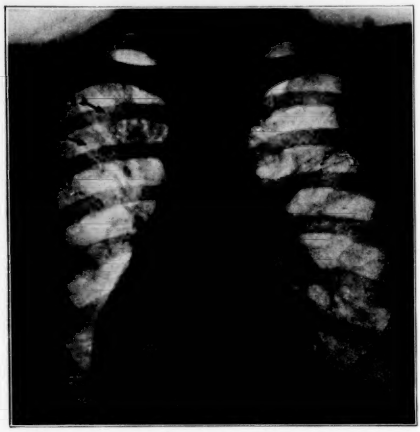

Fig. 4.—Parenchymatous involvement, moderate to minimal, left upper lobe. Old fibrous changes, right upper lobe.

if only a positive diagnosis of the disease is demanded. In a certain number, especially in the very early or minimal cases, not easy to determine, it alone makes the diagnosis positive. The best practice is to form the habit of making the diagnosis whenever possible without the use of the roentgen-ray films, but always to check up with them. Roentgenologic biopsies, as I like to call them, have changed entirely the work in the sanatorium and have banished much medical ennui.

Some of us are inclining to the view that when only a peritruncal roentgen-ray lesion is discovered in a patient, 25 or more years old, without any positive evidence of pulmonary tuberculosis, such a lesion is an excellent but not an absolute guarantee that the patient will not develop the disease at a later time. I have come to this conclusion from a study of the after-histories in such cases.

TUBERCLE BACILLI IN SPUTUM

One of my first medical memories carries me back some forty-six years to the time when, one morning at the breakfast table, I read the head lines in the newspaper and heard the family discuss how a German had discovered the cause of consumption. It is one of the most remarkable things in medical history that so little of importance has been added to our knowledge of the tubercle bacillus since that time. Its importance in diagnosis was not recognized at once. Dr. Trudeau told me of a Harvard student in whose sputum he had found tubercle bacilli, though it was impossible to make a diagnosis from the physical examination. He informed the family that the patient had pulmonary tuberculosis, but they were not satisfied and consulted the leading practitioner in New York, who happened to be Dr. Alfred H. Loomis, a very able man. He too failed to discover any evidence of disease from the physical examination and poohpoohed the idea of pulmonary tuberculosis. The boy was allowed to return to college, where he suffered a relapse and died. A number of experiences such as this of course quickly made a profound impression on the medical profession. But the pendulum, as is usually the case, swung too far, and soon many physicians were waiting for tubercle bacilli to appear in the sputum before making a diagnosis.

This was the situation when I began the study of tuberculosis about twenty-nine years ago. At that time this idea was so strongly opposed by the leaders in tuberculosis work that even today one sees many patients whose sputum has never been examined. Without doubt, the vast majority of these patients have pulmonary tuberculosis; but some may not. When I make this criticism, I include myself and many other workers in tuberculosis. There is no excuse, and many of us are trying to do better. The number of tubercle bacilli found in the specimen is important. Does one tubercle bacillus justify a positive diagnosis? When other data are positive, one tubercle bacillus is sufficient to clinch the diagnosis; but, if the diagnosis depends on the discovery of tubercle bacilli in the sputum, the presence of at least three or four is necessary. It seems needless to emphasize the fact that repeated examinations are necessary. A positive result should be confirmed as soon as possible, and only repeated negative reports are of significance in diagnosis. Improved methods of examining the sputum should be employed, such as the concentration method; but I think that these can safely be left to the laboratory technicians. There is one point that I should like to emphasize: in any patient with extensive physical signs and a negative sputum the diagnosis must be looked on as uncertain, and all the data should be reviewed carefully. There

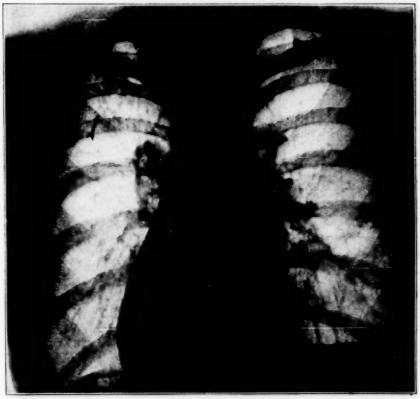

Fig. 5.—Parenchymatous involvement, moderate, left apex; elsewhere, calcified nodules.

is no excuse today for failure to examine the sputum. For the protection of the patient and for one's own peace of mind, this simple step should never be neglected.

ACTIVITY

I have endeavored to emphasize the importance of the localizing symptoms in the diagnosis of pulmonary

tuberculosis, and now in regard to the determination of activity I should like to stress the importance of the general symptoms. Tubercle bacilli in the sputum are not of much significance in the determination of activity. I know of a number of patients who from time to time have had tubercle bacilli in the sputum without any other signs of activity. They have kept well and have worked hard for years. The physical signs do not afford any definite data on this point, and the idea that all râles indicate activity is far from true. This idea arose, no doubt, from the standards very wisely adopted by the army in the World War. Without doubt, râles are a sign of potential activity, and when the patient is to be subjected to the strenuous activity that military training makes necessary, they should still be considered in that light. But in civilian life the matter is very different, and any such idea as this is highly unpractical. I, among many others, have done much work during the last twenty-eight years, and many of us have never been free from râles. Hemoptysis may or may not indicate activity. After the diagnosis has once been made, slight blood-spitting is of little significance unless it should be the forerunner of a severe hemoptysis. If accompanied by fever, tachycardia, dyspnea or cyanosis, the situation is grave and the blood-spitting is only one evidence of an advancing disease. In the majority of cases, slight blood-spitting has little more significance than epistaxis for the patient with diagnosed tuberculosis. The persistence of an unchanging chronic cough with or without sputum may indicate only the presence of scars and have no bearing on activity. I have already intimated that the general symptoms play a most important part in regard to activity. To use an analogy, the localizing symptoms correspond to the green lights on the railway and mean run slowly, while the general symptoms correspond to the red lights and mean that danger lies ahead, while safety demands the side track. Many capable physicians have made mistakes in regard to activity by failing to keep in mind some such simple rule as this. They confuse the significance of the two sets of symptoms and base too much on the data obtained from a study of the physical signs. These tell really not what is but what has happened. In the diagnosis of the disease the localizing symptoms far outweigh the general symptoms, but in the diagnosis of activity of the disease the general symptoms are vastly more significant.

EXCLUSION OF PULMONARY TUBERCULOSIS

I have already mentioned the fact that the antituberculosis campaign, so widespread in the whole country, has led many persons to consult their physicians for fear that they might have pulmonary tuberculosis. This has, of course, greatly increased the importance of being able to exclude the disease in nervous persons. Many such are sent to sanatoriums all over the country. At the Trudeau Sanatorium we have had as many as 15 per cent of such nontuberculous patients in some years. It is highly important to be able to tell such a patient that he does not have tuberculosis. To be able to do this successfully, some method, some standard of diagnosis, must be devised.

TABLE 1.—*Diagnosis of Pulmonary Tuberculosis*

		Diagnosis of Disease							Diagnosis of Activity			
		1	2	3	4	5	6	7	8	9	10	11
							Sub. Q Focal					
	Clinical and Laboratory Observations	Bacilli	Parenchymatous Lesion	Râles	Hemoptysis	Pleural Effusion	Roentgen-Râles	Roentgen-Ray	Fever*	Pulse†	Symptoms‡	Sub. Q Focal
Unwarranted	Evidence insufficient.	—	—	—	—	—	—	—	—	—	—	—
Nontuberculous		0	0	0	0	0	0	0				
Suspected 4 or 5 must be present but not both	Active	0	0	0	+	+	+ 0	0	+	+	+ 0	+ 0
	Inactive	0	0	0	+	+	+ 0	0	0	0	0	+ 0
Demonstrable (nonclinical)	Inactive	0	+	0	0	0	0	0	0	0	0	0
Clinical 1 or 2 or 3 or both 4 and 5 must be present Symptoms present	Active	+	+	+	+	+	+ 0	+ 0	+	+	+	+ 0
	Inactive	+	+	+	+	+	0	0	0	0	0	0

* Fever in males must be more than 99 F.; in females, more than 99.6 F. These figures must be exceeded four days out of seven.
† The pulse rate in males must be more than 90; in females, more than 96. These figures must be exceeded four days out of seven.
‡ Fatigue, loss of weight or strength, and other symptoms of poisoning are not to be disregarded when not explained on other grounds.

TABLE 2.—*Diagnosis in Two Hundred and Seventy-Four Cases in Which a Diagnosis of Pulmonary Tuberculosis Was Excluded or Only Suspected**

Nontuberculous, 202		Suspected (61 with Tuberculosis)	
Pulmonary abscess	1	Aspergillosis	1
Frontal sinus infection	1	Suspected malignancy of lung	1 D
Bronchiectasis	1	Tuberculous rib	1 H, TB
Periapical infection all teeth	1	Colitis	1
Ovarian cyst	1	Postpneumonic	1
Renal calculus	1	Suspected bronchiectasis	1
Nephritis	1	Bronchitis	3
Gallstones	1 D	Spontaneous pneumothorax	1
Postpoliomyelitis paralysis	1	Mitral regurgitation	1
Arthritis deformans with psoriasis	1	Thyroid disorders	2
Probable Reynaud's disease	1	Suspected syphilis	2
Rheumatism with purpura	1 D	Cervical adenitis (tuberculous)	2 1 TB
Mitral regurgitation	1	Nervous disorders	10
Endocarditis	1	Disability not diagnosed	34
Tonsillitis	1		
Tuberculous tonsils removed	1		
Malignant condition of lung	2 D		
Enteroptosis	4		
Syphilis	4 1 H		
Thyroid disorders	5	Nonclinical, 11	
Bronchitis	12		
Postinfluenza	13	Bronchitis	1
Nervous disorders	21	Antrum infection	1
Disability not diagnosed	126 1D, 2H	Disability not diagnosed	9

* D, died; H, hemoptysis; TB, developed pulmonary tuberculosis.

After many trials, the workers at the Trudeau Sanatorium came to the conclusion that there are five diagnostic criteria of paramount importance: (1) hemoptysis of a drachm or more; (2) pleurisy with effusion; (3) moderately coarse râles above the third rib and the third vertebral spine; (4) a paren-

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chymatous roentgen-ray lesion in the same area, and (5) tubercle bacilli in the sputum.

Pulmonary tuberculosis can be excluded safely only when all five of these data are absent. After following this method for a number of years, we attempted to check up on it. We studied the after-histories of 263 patients, in sixty-one of whom we were in doubt about the diagnosis and in 202 of whom we had excluded pulmonary tuberculosis by the method just described. It should be borne in mind that all these patients had been diagnosed as having pulmonary tuberculosis before admission to the institution. In only one of the 202 diagnosed as not having pulmonary tuberculosis did this disease develop during a period of from one to ten years after discharge. In the doubtful or suspected group, embracing sixty-one patients, two developed pulmonary tuberculosis, but while in the sanatorium one of these had tuberculous caries of the rib and the other had tuberculous cervical adenitis. Such results incline us to believe that the method is of some value. It is only fair to state that some specialists have frankly disagreed with us. But it might be added that we changed a few of their diagnoses. To arrive at such a diagnosis in some cases required at least three weeks. In some institutions to which very difficult cases are admitted, it has required several months to exclude pulmonary tuberculosis. We have made some mistakes, and in about 2 per cent we were frankly wrong.

THE TABLES

Brief reference may be made to the tables. In the first, what I have attempted to say has been put into tabular form. The cases have been separated into five groups: nontuberculous, unwarranted (evidence insufficient), suspected, demonstrable nonclinical and demonstrable clinical. All cases of hemoptysis of a drachm or more not attributable to any other cause, or cases of unexplained pleurisy with effusion and with none of the other diagnostic criteria, are diagnosed as suspected pulmonary tuberculosis and treated for a short while. The demonstrable nonclinical cases are those in which, often in routine examination, a definite roentgen-ray lesion without other criteria or symptoms is discovered. The demonstrable clinical cases are those that present both hemoptysis and pleurisy with effusion not attributable to any other cause, or râles or a parenchymatous roentgen-ray lesion, in the upper third of the chest or tubercle bacilli in the sputum. The subcutaneous tuberculin reaction is reserved for those cases in which the diagnosis is indefinite but the roentgen ray suggests a possible change. It is not used when a definite parenchymatous lesion is present. It is given in the hope that the patient will not react to a repeated dose of 0.01 cc. of old tuberculin. Such nonreacting patients almost never present at any future time any symptoms of pulmonary tuberculosis. If they react to any dose given (the doses are gradually increased to 0.01 cc.), the lungs are examined and roentgen-ray films are taken to see whether the area under observation or any other area shows any change. If it does, it is assumed that the disease area is not fully walled off and that further treatment is necessary. A reaction

TABLE 3.—*Incidence of Tuberculous Signs**

	202 Non-tuberculous		61 Suspected		11 Non-clinical	
	Tem-porary	Per-sis-tent	Tem-porary	Per-sis-tent	Tem-porary	Per-sis-tent
Moderately coarse râles						
Apical	9=4%	4=2%	2=3%	2=3%	1=9%	0
Basal	15=7%		3=5%	3=5%	2=18%	0
Atypical parenchymatous	4	2%	12	20%	8	73%
Hemoptysis	..	....	16	26%		
Pleurisy with effusion	..	....	3	5%		
Previous tubercle bacilli	..	....	3	5%		
Subcutaneous tuberculin test						
Positive	94	60%	29	60%	8	73%
Negative	65	40%	15	34%	3	27%
Focal roentgenogram						
Physical signs	8	5%	13	30%		
Subsequent history of						
Hemoptysis	3	1.5%	1	1.6%		
Pleurisy	..	....	1	1.6%		
Pulmonary tuberculosis	..	....	2	3%		
Dead (one of tuberculosis)	5	2.5%	1	1.6%		

* The occurrence of râles, roentgen-ray lesions, hemoptysis, pleurisy, tubercle bacilli previously found, the tuberculin test, and subsequent history in 202 nontuberculous patients, sixty-one patients suspected of having pulmonary tuberculosis and eleven nonclinical cases.

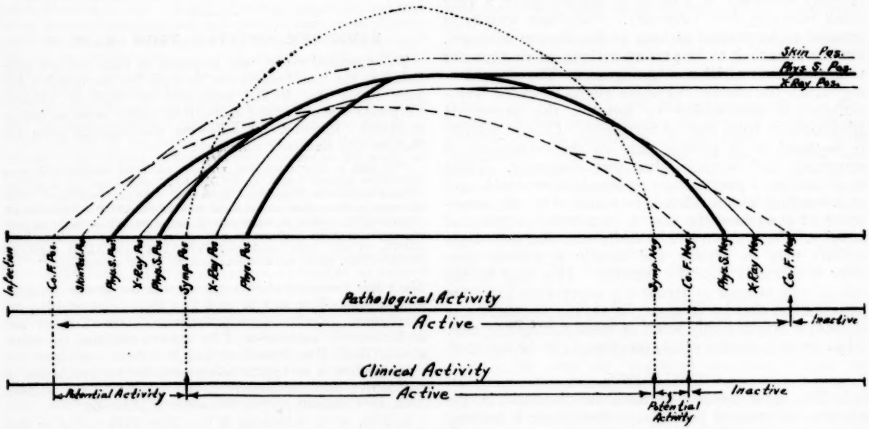

Fig. 6.—Relation of symptoms and data, obtained from physical examinations, etc., to pathologic and clinical activity.

rarely occurs in the lesions in the cases in which it is administered. If a general reaction to the tuberculin occurs and no change is discovered in the lungs, we assume that if any pulmonary tuberculosis is present it needs only a brief treatment and we act accordingly.

In the diagnosis of activity we feel that symptoms must be present and that fever or elevation of temperature attributable to no other cause, and a rapid pulse are the two most important. Other symptoms are, of course, to be taken into consideration, such as fatigue, loss of weight and strength, and night sweats. A general tuberculin reaction is in our opinion of little weight in the diagnosis of activity unless accompanied by some change in the lung, for a slight lesion (a gland) at any point in the body might bring it about. We have assumed also, arbitrarily it must be confessed, that for the diagnosis of activity in a male the temperature must be over 99 F. or the pulse rate must exceed 90 on four days out of seven. The figures for females are 99.6 F. and a pulse rate of 96.

An attempt has been made in figure 6 to correlate symptoms, physical evidence, roentgen-ray lesions, complement fixation and the tuberculin skin reaction with the pathologic and clinical activity, as it has been interpreted at the Trudeau Sanatorium. The chart requires and may repay a little study. It is assumed that activity begins with infection though it may remain undiscoverable for some time. From some work done in our laboratory we have assumed that complement fixation may become positive during the first week after infection in guinea-pigs (Petroff). Another assumption that we have made in the chart does not hold in some cases in children, for they may react to the tuberculin skin test only after ninety days, an observation more recently confirmed in a study of animals given a very small infecting dose (Petroff). Pathologic activity is granted to be present as long as the disease advances, but we assume it to be present as long as changes are to be noted on serial roentgenograms. The stage during which the disease decreases might be called retroactivity, if one wishes to separate the period of advancement from that of regression. Clinical activity is assumed to be present only on the occurrence of symptoms and to cease when they disappear. There is, of course, a period more or less indeterminable and of a varying length when before and after the occurrence of symptoms the case is in a state of potential activity. From this it can be easily seen that pathologic activity may be present and usually is present long after the case is clinically inactive. This may be the reason why relapse so frequently supervenes after the patient feels that he is safe. In reality, the disease is absolutely arrested only when in serial roentgenograms, taken several months apart, no change can be detected.

CONCLUSIONS

1. The most important factor in diagnosis in the majority of cases of pulmonary tuberculosis is keeping the disease in mind.

2. Confidence born of knowledge rather than acuity of hearing is the chief difference between the general practitioner and the specialist. I have divulged the secret of the latter's trade, which is largely concerned with listening and auscultating, after cough.

3. The pitfall of familiarity must be avoided, for the tubercle bacillus is no respecter of presons.

4. Search for the history of the opportunity for infection is far more important than a consideration of ineffectual heredity.

5. The localizing symptoms are of great importance in the diagnosis of the disease; the general symptoms of great significance in the determination of activity.

6. The moderately coarse or fine persistent râle in the upper third of the chest is the most important abnormal physical sign, and when backed up with a parenchymatous roentgen-ray lesion justifies a diagnosis of pulmonary tuberculosis.

7. The diagnosis should be verified whenever possible by the discovery of tubercle bacilli in the sputum, and if they are absent the evidence on which the diagnosis is based must be carefully reviewed.

8. In order to make a positive diagnosis of pulmonary tuberculosis, one or more of the following diagnostic criteria must be present: hemoptysis of a drachm or more; pleurisy with effusion; moderately coarse râles above the third rib and the third vertebral spine; a parenchymatous roentgen-ray lesion in the same area, and tubercle bacilli in the sputum.

9. In order to exclude pulmonary tuberculosis, all five of these criteria must be absent.

10. It may require a study lasting at least three weeks in order to be able to affirm or to exclude the presence of pulmonary tuberculosis.

11. The percentage of error in this method is about 2.

104 Main Street.

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Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

W. A. PUCKNER, SECRETARY.

RADIO-REM OMITTED FROM N. N. R.

The appended report was prepared in 1925, but not published at the time because the Radium Ore Revigator Company stated that it had purchased the Radium Therapy Corporation and that the Radio-Rem outfits were no longer marketed. Recently, the following was received from the Radium Ore Revigator Company:

"We wish to inform you that we have purchased complete title to a radio-active product known as RADIO-REM which was for a number of years included in 'Non-Official Remedies.' Effective December 1, 1927, the name of this article was changed to:—REVIGATOR (MEDICINAL STRENGTH), which is manufactured by us in any strength desired, the minimum being 5400 mache units per daily ingestion. This is in addition to our other product—REVIGATOR (HEALTH SPRING STRENGTH), which has been marketed by us for several years."

Since this communication suggests that the former recognition of Radio-Rem may be used as a means of exploiting the "Revigator (Health Spring Strength)" the Council has authorized the publication of its report explaining the omission of Radio-Rem from New and Nonofficial Remedies:

Radio-Rem is an apparatus designed for the production of radioactive drinking water. It is marketed by the Radium Therapy Corporation, San Francisco, California.

In 1916, while Schieffelin & Co., New York, acted as distributors, two forms of the Radio-Rem apparatus (imparting, respectively, 1.8 and 3.6 microcuries of emanation to 500 cc. of water in twenty-four hours) were accepted after their efficiency had been checked and the advertising claims found acceptable. In May, 1925, however, Schieffelin & Co. informed the Council that they were no longer interested in the product and that it had been purchased by the Radium Ore Revigator Co. of San Francisco.

To determine if the Radio-Rem apparatus might be retained in New and Nonofficial Remedies under the changed ownership, the Radium Ore Revigator Co. was informed of the steps that were necessary if continued recognition was desired. A

reply was received from the Radium Therapy Corporation, San Francisco, requesting continued recognition of Radio-Rem, and submitting the advertising.

Since the Council does not countenance the use of an accepted article as a means of advertising one that is not acceptable, the Radium Therapy Corporation was informed that from information received it appeared that the Radium Therapy Corporation is closely identified with the Radium Ore Revigator Co., that the advertising sent out by this company for its "Radium Ore Revigator" is addressed to the public and contains many claims which could not possibly be permitted in connection with the sale of any product accepted by the Council. Inquiry was made whether it was the intention to continue the exploitation of the Radium Ore Revigator with the claims that are now made for it. The reply stated that the Radium Therapy Corporation was owned by Mr. R. P. Sherman and that the Radium Ore Revigator Co. was a Nevada Corporation with various stockholders, of which Mr. Sherman is only one. No assurances as to the future advertising policy were received. The writer of the letter stated: "I have been in charge of this Company of Mr. Sherman's as well as other of his interests, but I have no connection with the Revigator company."

A layman who wrote the Radium Therapy Corporation about Radio-Rem received some Radio-Rem advertising and a letter (from the person who had informed the Council that he was not connected with the Revigator Company), which stated: "We have another company which has a similar article known as the Radium Ore Revigator, which is manufactured under the same basic patents as Radio-Rem. We are asking them to send you their descriptive literature."

As the revigator "literature" and letter bore the same date as that received from the Radium Therapy Corporation, there is obviously a rather close connection between the two concerns.

The "Radium Ore Revigator" is an earthenware pot which is claimed to impart radium emanation to water that is kept in it. Those who exploit it want the public to believe that many diseases are due to a lack of radium emanation, and that many diseases are prevented and cured by the consumption of radium emanation by means of the "perpetual health spring," the radium ore revigator. The following thoroughly misleading claim is contained in the advertising: "The last few years have brought about the recognition of this element [radium emanation] from the health standpoint to the extent that the most competent authorities now attribute the great cures effected by the famous health springs of the world to the unusually liberal presence of this element in the water of those springs. And, by the same token, they attribute the general unhealthy condition of most people, as well as many of the illnesses to which mankind is victim, to the fact that the body is daily deprived of the natural and normal supply of this element through its loss from our drinking water." The advertising contains a table from "statistical data of over 10,000 cases reported by various authorities as treated with radio-active emanation in various strengths" which will lead the public to believe that a large proportion of cases of "anemia," "diabetes," "inflammation of uterus," "sick headaches," "nervous prostration," "pyorrhoea," are cured or benefited by the use of radium emanation. This table is preceded by the claim, obviously untrue, that practically every case of "constipation, indigestion, stomach disorders, various skin diseases, and general run-down feeling" has been reported to be benefited.

Tests show that the emanation imparted to water kept in a Revigator pot is small in amount. The Council will not accept any apparatus which imparts less than 2 microcuries (2,000 millimicrocuries) of emanation to water stored in it for twenty-four hours, the water which had been in one of the Revigator pots for forty-six hours was found to contain only 0.0304 microcurie (30.4 millimicrocuries) of emanation.

The Council directed the omission of Radio-Rem (Outfit No. 4 and Outfit No. 5) from New and Nonofficial Remedies, because it is used as a means of furthering the sale of the Radium Ore Revigator, which is exploited to the public with false claims for the therapeutic efficiency of radium emanation.

Articles Not Acceptable

AMMONIUM ICHTHYOLATE-DAYTON AND DAYTOL NOT ACCEPTABLE FOR N. N. R.

Ammonium Ichthyolate-Dayton.—In 1925 the Council informed the Dayton Chemical Company, manufacturers of Ammonium Ichthyolate-Dayton, that this product could not be accepted unless the advertising claims were brought into conformity with the Council's report on Ichthyol and its substitutes (Ann. Reps. Coun. Pharm. & Chem., 1924, p. 31), except that it might be stated that Ammonium Ichthyolate-Dayton is mildly germicidal and antiseptic. The firm has since taken no action to bring its advertising into conformity with the rules of the Council.

Daytol.—From advertising sent out by the Dayton Chemical Company for "Daytol" it is evident that this product is essentially similar to Ammonium Ichthyolate-Dayton. The Dayton Chemical Company has not requested consideration of "Daytol" by the Council, and the Council's consideration is based on the current advertising sent the Council by physicians.

Three of the illustrations in the advertising of "Daytol" are identical except for color or shading with three that were submitted for Ammonium Ichthyolate-Dayton. One of these is a photomicrograph designed to show the penetrating power of Daytol; one to show that Daytol combines only with acid protein; one to show the migration of Daytol in a negative field. The advertising also contains a table which is identical with an equal portion of a table submitted with the advertising of Ammonium Ichthyolate-Dayton, and intended to show the antiseptic activity of Daytol. Part of a report from a laboratory is identical with an equal part of a report of the Pease Laboratories submitted with the advertising of Ammonium Ichthyolate-Dayton.

Daytol is advertised as "A New, Non-Poisonous, Penetrating, Healing Germicide and Antiseptic." The following, taken from the circular, fairly shows the nature of the claims made for Daytol:

"Daytol is essentially a non-poisonous, soothing, germicide and antiseptic; hence its field of usefulness is thus clearly indicated as occupying, in part, that heretofore generally conceded to phenol, bichloride of mercury, iodine, chlorine, etc. . . . Chronic Rheumatism caused by a deficiency of sulphur in the system yields promptly to the internal administration of Daytol in capsule form. . . ." It is recommended in boils, erysipelas, mumps, pyorrhea and gonorrheal conditions. It is not stated to be curative in gonorrhea. The statement is as follows: "The DAYTOLOID combination is not only germicidal and healing, but it also is strongly deodorizing, thus is indicated in LEUCORRHEA, GONORRHEAL conditions and in inflamed vaginal disorders." (The combination is stated to contain a special Daytol, hydrastis F. E., eucalyptus, thymol and camphor with petrolatum.)

Without considering, for the present, other objections that might arise against either or both of the products under the provisions which govern the acceptance of articles, the Council declared Ammonium Ichthyolate-Dayton and Daytol unacceptable for New and Nonofficial Remedies, because the therapeutic claims made for them are unwarranted.

The preceding report was sent to the Dayton Chemical Company for consideration. No reply was received from the Dayton Chemical Company, but the Daytol Company wrote stating that it is the successor to the Dayton Chemical Company. The Daytol Company expressed a desire to make Daytol acceptable for New and Nonofficial Remedies. It stated that as a preliminary step the germicidal and antiseptic action of the product was being studied; and that when this information became available, clinical trials were to be instituted.

The firm estimated that almost two years would be required for the investigation. The firm gave no indication that its propaganda for Daytol would be discontinued in the meantime; therefore, the Council authorized publication of this report.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 31, 1928

CANDY

One of the most significant features of our changing food habits during the past century has been the increasing use of sugar. The annual per capita consumption has risen from less than 9 pounds in 1823 to more than 110 pounds at the present time. In commenting on this statistical fact, Mendel[1] has recently attempted to evaluate it with respect to our dietary needs. Assuming the average daily energy requirement to be 2,500 calories, the Americans used, in 1823, the equivalent of 44 calories a day; in 1924 they used 547 calories. In other words, although sugar represented, a hundred years ago, less than 1.75 per cent of our total intake of energy-yielding foods, today it constitutes, Mendel pointed out, about one fifth of the requisite food intake of our population, or 21.6 per cent. This amounts to about twenty cubes a day of the conventional table variety. Of this food Slosson has paradoxically remarked that its only fault is its perfection. It is so pure that man cannot live on it. This is because refined sugar does not retain vitamins, and vitamins are necessary to health.

Overindulgence in sugar has been assailed on many occasions as a national dietary fault. The food is charged with being susceptible to fermentation and having a disturbing influence on digestion when consumed in liberal amounts. Students of diabetes have warned from time to time that the inordinate use of sugar may predispose to the disease, though it may really be the excess of any food rather than of carbohydrate in particular that is liable to do harm. Because of its high fuel value and ready utilization, sugar tends to displace other foods that are carriers of desirable inorganic salts, vitamins and bulk. Professor Sherman[2] further charges that from a gastronomic standpoint in the American cuisine sugar is used with too many kinds of food, with a consequent loss of variety and piquancy of flavor in the different dishes. The nutty flavor of grains and the natural taste of mild fruits are often concealed by the addition of large quantities of sugar.

Candy is an article of diet, rich in sugar, that has found great favor in this country. Americans have been termed a candy-loving nation, and much of the criticism leveled at the undue use of sugar is directed to the use of candy. To what extent the popular confection may deserve this opprobrium, if any, can now be better determined from a recent survey made by the Department of Commerce of the country's candy consumption in 1926.[3] About 80 per cent of the candy makers of the nation showed total candy sales of 1,083,399,754 pounds, valued at $258,251,562. This was at a rate of about 9 pounds for every man, woman and infant at an average per capita cost of more than $2. If these figures are arbitrarily augmented to represent the assumed entire per capita candy production at 11 pounds with an average food fuel value of 20,000 calories, the candy contribution to the day's allowance amounts to 54 calories, or only 2 per cent of the provisionally accepted daily requirement of 2,500 calories. This could scarcely be made the basis of cogent criticism, particularly in view of the fact that much candy is the carrier incidentally of such wholesome foods as nuts and dried fruits. However, consideration of "averages" in such instances may be misleading. Candy is by no means a food universally eaten by all of our millions of population. Consequently the quota that reaches the smaller number of actual users is correspondingly increased. The fact that the sales in one state, Connecticut, were doubled in a single year suggests that where candy is liberally eaten its actual contribution to the day's intake is by no means as negligible as the "average" statistics for the entire population of the United States would lead one to infer.

1. Mendel, L. B.: Our Changing Food Habits, in Your Weight and How to Control It, edited by Morris Fishbein, New York, George H. Doran Company, 1927.
2. Sherman, H. C.: Food Products, New York, Macmillan Company, 1924.

ANOREXIA AND DIET

Anorexia, or lack of appetite, comes to the attention of the physician in persons of all ages. It attains especial importance when the condition has been sufficiently severe or has persisted long enough to cause signs of malnutrition. Children are particularly likely to have anorexia; in them it is not usually a specific disease but only a symptom of organic or functional disorder. When an organic basis is discovered, the remedial procedure is clearly indicated. The functional types of anorexia are not so easily interpreted for correction. Bartlett[4] has recently pointed out that, in adult patients, probably the most stubborn and resistant anorexia is that which almost invariably accompanies severe anemia. Certainly there is a strong relationship between the condition of the blood, particularly the hemoglobin and the red blood cells, and the proper

3. The data were reported in the New York Times, Jan. 26, 1928.
4. Bartlett, W. M.: An Analysis of Anorexia, Am. J. Dis. Child. **35**: 26 (Jan.) 1928.

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function of the appetite. It is also common experience that when the severe anemia diminishes, because of any form of treatment, the first and most promising sign of improvement is the return of the appetite. This is particularly true, Bartlett continues, in pernicious anemia, in which the return of the appetite always marks the beginning of remissions. The return of the appetite, sometimes exaggerated, is common after transfusion in severe anemia of either the primary or the secondary type.

The influence of diet in the management of anemias has lately become the subject of active discussion in medical circles. The use of liver, in particular, has been acclaimed almost as a specific in pernicious anemia. Beneficial effects have also been attributed to liver, kidney and muscle meat in certain types of experimental secondary anemia. These foods are far more potent, for example, than the dairy products that are widely lauded in connection with child welfare.[5]

Bartlett has compared the gains of weight induced by various measures in children undernourished because of loss of appetite. The treatments consisted of daily administration of saccharated iron, daily administration of cod liver oil, or the introduction of liver, beefsteak and kidney into the diet at least three times a week. According to his statistics, the most efficient and reliable method of treatment for chronic functional anorexia is the introduction of fresh calf's liver, broiled beefsteak and lamb's kidneys into the diet of the child. The clinical results of Bartlett suggest that the liver diet contains some specific substance which increases an appetite that is depleted and which renews one that is lost. If this is true, judging from the results that he reported, it is suggested that this specific substance which produces appetite is present in liver and absent in saccharated iron and cod liver oil. In other words, the factor that produces appetite is probably neither iron nor vitamin D, unless it is the favorable combination of the two which occurs in a more available form in liver.

The significance of these observations on the management of anorexia is enhanced by the circumstance that anorexia far exceeds all other presenting symptoms in its incidence in children seen in the outpatient clinic. At the Massachusetts General Hospital the five commonest reasons for bringing children to the outpatient clinic were loss of appetite, cough or cold, physical examination for admission to public school, pallor and underweight. About one fourth of all the children seen there consecutively, among more than a thousand records, came to the hospital with loss of appetite as a presenting symptom. Vitamin B has repeatedly been mentioned as an essential for securing an adequate food intake; according to Osborne and Mendel, liver tissue is rich in this dietary component. Hence, another valuable use is established for "poor man's beefsteak," a meat that was at one time considered the poorest of the varieties contributed to man's diet by the animal body.

5. Whipple, G. H.: Blood Regeneration in Severe Anemia: Influence of Striated and Smooth Muscle Feeding, Am. J. Physiol. **79:** 260 (Jan.) 1927; Blood Regeneration in Severe Anemia: Influence of Kidney, Chicken and Fish Livers and Whole Fish, ibid. **79:** 271 (Jan.) 1927; Blood Regeneration in Severe Anemia: Influence of Dairy Products on Hemoglobin Production, ibid. **79:** 280 (Jan.) 1927.

THE KIRKPATRICK CONSUMPTION CURE FAKE

The quack consumption cure exploited by one George Kirkpatrick, an obscure veterinarian of Portland, Ore., was the subject of editorial comment in THE JOURNAL, Dec. 17, 1927, and of an article in the Propaganda Department of THE JOURNAL, March 6, 1926. In the editorial it was brought out that Portland was getting some dubious publicity from the fact that its mayor seemed to be standing sponsor for a quack consumption cure—Kirkpatrick's "Pul-Bro-Tu" or "Body Building Fluid." Mayor Baker of Portland addressed a letter to his city council giving what purported to be a final report relative to certain tests on cows that had been made with the Kirkpatrick "patent medicine." It appears that those data on which the report was based that came from respectable and scientific sources were misquoted, while much of the data had a hopelessly untrustworthy origin.

Mayor Baker's letter proved a valuable ballyhoo for Kirkpatrick and it was immediately sent broadcast all over the country, the tuberculous public being led to believe that Kirkpatrick had discovered a "cure" for consumption. The reputable health agencies of Portland, naturally, were greatly exercised by the harm this piece of local quackery had done to the public health, to say nothing of the serious setback it gave to the educational program of reputable antituberculosis organizations. Finally the city council of Portland decided that a committee should be appointed to investigate the "cure" and the members of this committee were named by Mayor Baker. The committee held several hearings and on March 10 filed a report declaring unanimously that the Kirkpatrick nostrum was "without value in the treatment of tuberculosis and its use, as such, constitutes a menace."

Certain facts brought out during the committee's investigation are of more than academic interest to the organized medical profession not only of Oregon but of the country. When Mayor Baker testified before the committee, he declared, in effect, that his enthusiasm for Pul-Bro-Tu was based on the eulogistic reports he had received regarding the nostrum from Drs. Ralph C. Walker and Carl T. Ross, each of them members of the Oregon State Medical Society. The committee brought out further: That Dr. Walker was a stockholder in the Kirkpatrick Remedies Company, and that both Dr. Walker and Dr. Ross

had profited through their tie-up with the Kirkpatrick outfit; that Dr. Walker, as a roentgenologist, made roentgenograms of victims sent to him by Grant Smith, the hired M.D. of the Kirkpatrick concern and a one time advertising venereal quack; that Dr. Ross made physical examinations of the same victims!

Another interesting angle has developed. THE JOURNAL has learned that the Kirkpatrick nostrum is going to be used by certain disciples of the Albert Abrams fakery as an accessory to the "Electronic Reactions of Abrams" ("E. R. A."). One G. A. Esterberg, an osteopath of San José, Calif., and an Abrams disciple, claims that he and one Dr. Frank Chaffee, "President of the College of Electronic Medicine" of San Francisco, recently made a trip to Portland to "investigate" the Kirkpatrick "Body Building Fluid." Esterberg claims to have secured the general distributing rights for the Kirkpatrick nostrum and expresses the opinion that the "Body Building Fluids work hand in hand with E. R. A." Esterberg also claims that Dr. Francis A. Cave of Boston, another Abrams disciple, has also "introduced these Body Building Fluids in his private practice and is endorsing same to the profession." Esterberg's results with the Kirkpatrick nostrum, apparently, exceed even those of Kirkpatrick himself. According to Esterberg, the Kirkpatrick product is curing tuberculosis, carcinoma, sarcoma and cataracts, and in high blood pressure it is "practically specific!"

In the meantime the latest report is that Quack Kirkpatrick has again been arrested on a charge of violating the medical practice act of the state.

Current Comment

THE DEATH OF SIR DAWSON WILLIAMS

One month after his resignation as editor of the *British Medical Journal,* Sir Dawson Williams died suddenly, February 27, aged 74. He had been assistant editor from 1895 to 1898, having worked part time on the publication previously to the first date, and he became editor of the *British Medical Journal* on the death of Mr. Ernest Hart in 1898. Sir Dawson had done much to develop the periodical to the high place that it held in medical journalism. In medicine he was recognized as omniscient and his ability to develop the writings of others was the subject of universal comment. In a recent number of the *British Medical Journal* leading medical men from all over the world pay him the tribute that was his due for his contribution to the promotion of medical knowledge. To these tributes THE JOURNAL wishes to add its recognition of his notable work. His constant willingness to be of assistance in campaigns against fraud and folly and in promoting the friendly relationships which should and do exist among intelligent scientists on both sides of the Atlantic was an inspiration.

NEED OF INCREASED FACILITIES FOR PUBLICATION IN THE FIELD OF FORENSIC MEDICINE

The first medicolegal discussion of any extended nature in this country appears to be by Benjamin Rush in his Introductory Lectures of 1811. Lecture 16 is on medical jurisprudence; in it Rush makes the following statements: "They entertain very limited views of medicine who suppose its objects and duties are confined exclusively to the knowledge and cure of diseases." Medical science is to render other services to society and is intended "to extend its benefits to the protection of property and life and to detect fraud and guilt in many of their forms." In other words, while the primary object of practical medicine is to maintain health, medical knowledge is to be used also in solving problems of a medical nature that arise in the course of the administration of justice, criminal or civil. Incidentally, Rush laments the comparative lack of publications and of teaching in medical jurisprudence in this country, and in these respects the conditions perhaps are even more lamentable now than in his day. Whatever the reasons may be, forensic or legal medicine cannot be said to receive the recognition and support here that its importance demands or that it receives in certain other countries. The United States is far behind in all respects and especially in the matter of medicolegal periodicals. There are noteworthy and influential medicolegal journals in German, French and Italian, but the periodical medicolegal publications in English are and have been insignificant and inconsequential. Recently a new publication has appeared in London, the *Police Journal,* the object of which is to be a medium for the discussion of all matters of common interest to all police forces of the British Empire. The field of the new journal is practical police and criminologic work in general, but it is of interest to note that the technical and medicolegal branches of the work are to be included because police work is "becoming in an increasing degree scientific" and it is aimed to secure a more active cooperation of the professional police officer and the medicolegal and other experts. In the United States there is great need not only for a high grade periodical like the *Police Journal* but also for an adequately supported technical journal or archives of legal or forensic medicine in order to foster its development in the interest of a better medicolegal service to the public.

STERILITY IN AMERICAN MARRIAGES

Every nation is concerned to some extent with the growth or maintenance of its population. This may be modified by a number of factors, such as immigration and emigration, but the chief influences are those which affect births and deaths. These, too, come to a larger degree into the province of medicine and the public health. Mortality rates are modifiable by the application of the principles of preventive medicine. As far as the birth rate is concerned, the significance of sterility and the extent of its occurrence need to be taken into consideration. Most of the estimates relative to the proportion of marriages that remain without issue in our American population are variable and open to con-

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siderable criticism. A new statistical study of the comparative childlessness in American marriages has recently been completed by Lotka.[1] He computes the effective or gross sterility of marriages of American wives among the white population at 17 per cent. Of this, about 1.2 per cent is due to the premature death of wives who otherwise would eventually have had a child; 2 per cent further is due to premature deaths of husbands whose wives would otherwise eventually have had a child. A further 0.8 per cent is due to childlessness resulting from divorces in couples that would eventually have had a child. The net sterility of marriages of American (white) wives is accordingly 13 per cent. Something of the potential possibilities of childbearing is indicated by the circumstance that out of 100,000 white females born, 21,793 die single and 78,207 marry eventually. In a country counting a population of far more than a hundred million souls, the outlook for the future for some time to come is certainly not discouraging. Perhaps questions of heredity and eugenics should be of greater concern from a national standpoint than those of fertility.

Association News

THE MINNEAPOLIS SESSION

Exhibit on Gonorrhea in the Female by Section on Obstetrics, Gynecology and Abdominal Surgery

Last year the Section on Urology, with the American Social Hygiene Association cooperating, sponsored a section exhibit on "Gonorrhea in the Male." To complete the emphasis on treatment of gonorrhea, this year the Section on Obstetrics, Gynecology and Abdominal Surgery has arranged for a Special Exhibit on "Gonorrhea in the Female." The chairman of the section has appointed a special committee, consisting of Dr. Fred L. Adair, chairman, Dr. Charles C. Norris, Dr. Palmer Findley, Dr. Frederick J. Taussig, Dr. Frederick C. Holden, and Dr. Walter M. Brunet, representing the American Social Hygiene Association. Owing to unforeseen circumstances, the announcement could not be made before this date.

This committee, with the American Social Hygiene Association cooperating, is preparing an exhibit on "Gonorrhea in the Female," taking up the diagnosis, from the laboratory and clinical standpoints, of infection of the urethra and Skene's and Bartholin's glands, and lesions of the cervix, the generally accepted methods of treatment, by injection, diathermy, and tropical applications, comparisons of the complement fixation test, cultures, clinical observations, and the criteria of cure. In addition, the committee is planning a comprehensive collection of material depicting some of the complications arising in the course of an attack of gonorrhea and the manner in which these complications can be best treated. To those desiring to take part in this exhibit, the committee suggests that they limit their presentations to fundamentals and essential points.

As the date when all applications for the Scientific Exhibit has passed, the Committee on Scientific Exhibit has assigned a block of space for the use of the Committee on Section Exhibit of the Section on Obstetrics, Gynecology and Abdominal Surgery, which will be allotted to the individual participants in the exhibit dealing with gonorrhea in the female.

Applications for this exhibit should be filed *immediately* with the secretary of the Committee on Section Exhibit, Walter M. Brunet, M.D., Room 1541, 370 Seventh Avenue, New York City.

1. Lotka, A. J.: Sterility in American Marriages, Proc. Nat. Acad. Sc. **14**: 99 (Jan.) 1928.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Twenty-Fourth Annual Meeting, held in Chicago, Feb. 6, 7 and 8, 1928

(Continued from page 987)

FEDERATION OF STATE MEDICAL BOARDS

DISCUSSION ON PAPERS OF DRS. ZAPFFE AND RYPINS

DR. H. M. PLATTER, Columbus, Ohio: I agree that as the Association of American Medical Colleges and the Council on Medical Education and Hospitals have progressed in this work of standardization of medical education there is very little the state boards can do except to fall in line. I particularly agree that our major function as secretary of the state board is the elimination of quackery. We have the right, as secretaries of state boards, to ask for, demand and insist on the support of the medical practitioners, of medical societies, of state and local organizations in the American Medical Association in the carrying out of this program, and I think we should exercise it. We have recently been successful in defeating a chiropractic referendum in Ohio. That was done by the stimulation of the individual medical practitioners in the state of Ohio and an explanation of what the thing meant. I am proud to say that they responded almost 100 per cent, and the majority against the movement was 250,000. Following immediately afterward, I believe we had the wisdom to stimulate the same local groups of men who were interested in defeating the referendum in the problem of enforcement, and we have asked them to cooperate with us in seeing the proper enforcement authorities, locally, and explain to them what they want and insist that the medical practice act of Ohio shall be enforced. Wonderful to relate, with less money than we have had in years we are getting a greater cooperation than we have ever had before.

DR. E. P. LYON, Minneapolis: I shall speak from the standpoint of a dean of a medical college. We try to maintain good medical colleges connected with the universities of this country. Their honesty of purpose can hardly be questioned anywhere. Something can be left to honest people. Yet we find ourselves confronted, as deans, with all this conflicting mass of requirements of state laws. We ought to have some way of meeting individual injustices to capable students, and I think the difficulty ought to be met either by leaving considerable latitude to the individual universities or to the College Association or to the Council on Medical Education and Hospitals; and the state boards ought not to inquire into these cases when settled by good authority.

I would add to Dr. Rypins' subject the word "simplification." What you are after—what we are all after—so far as premedical requirements are concerned, is an adequately prepared and intelligent man. We express his preparation properly by two years of college work, but we go too far when we express it by so many hours of physics, so many hours of chemistry, and so many hours of biology. Say rather something like this: "Two years of college work including adequate preparation in biology, physics and chemistry (including organic), gained by passing standard college courses or certified to by college teachers of these subjects."

There is another function of your examining boards, and that is not only to eliminate quackery but I think you ought also to see whether we as medical colleges really do our work right. Do away with these very complicated definitions which deny freedom of action to the colleges, but hold them to results by making your examinations comprehensive and thorough. If a college became academic or lax, its students would fail. That is where your power ought to come in.

All this is exactly what is in the air; and the previous history of barriers set up here and there, as everybody has said, was a necessary stage in progress. But we have now reached another milestone. We want to clear away some of these barriers.

DR. S. W. WELCH, Montgomery, Ala.: It would be the most fatal blunder that we could possibly make for the state medical examining boards to devote their time to police duty and not check up on the teaching institutions of the country. We are the only authority that can make, if you please, the

medical schools do their work, and if we repudiate that obligation we shall be in danger of dropping back into the undesirable conditions that confronted us in 1905. I think it is the duty of medical examining boards and of the medical profession to outline a legal policy to be presented to the law-making bodies of their respective states, medical practice acts which will, if properly administered, eliminate quackery and fraudulent practices of every kind. But it ought not be left to the medical profession to advise as to how to protect their people, and then come in and jeopardize their own popularity and own influence by being compelled to enforce those laws. That is the duty of the judges and juries of this country.

DR. C. B. PINKHAM, San Francisco: Commenting on Dr. Welch's suggestion that each state has its own legal enforcement machinery, we all realize that idealistically it is beautiful. Practically it does not work out at all so far as California is concerned. District attorneys are only too glad to have our attorney come in and relieve them of political pressure by having our prosecuting attorney undertake the prosecution of the violator of the law. We find that the political influence of the average violator is sufficient to result, in many instances, in refusal to issue a complaint against the violator of the law. We have had several instances in which we have had to go to another county to get a complaint for a very flagrant violation of the law. We also find that we have to be extremely careful in picking our juries. We have adopted a policy of not asking that a fine be imposed on conviction. We find that the imposition of a jail sentence, suspended for a period of two years on condition of good behavior, has a more salutary effect than the imposition of the fine.

DR. T. J. CROWE, Dallas, Texas: The prime function of the state board, and certainly the prime function of the Federation of State Boards, if I understand its purpose, is effectual enforcement of medical practice acts. If we overlook the police power of our various boards and devote our time to checking up on the colleges, we shall not get anywhere. The Texas Medical Association, three or four years ago, commenced spending $50,000 to $75,000 a year to educate the public to the point at which they could secure prosecution in Texas, and I want to say that it was a profitable work.

DR. WILLIAM JEPSON, Sioux City, Iowa: Let us do something before we start becoming a lot of police officers. A number of states have made it a requirement that there shall be an additional hospital year following their four years or more of college instruction. I may say to our board that it is one of the greatest concerns as to how a young man is putting in that year.

DR. FRED C. ZAPFFE, Chicago: Dr. Welch reminds me of a review I made recently and published as an editorial in the *Bulletin of the Association of American Medical Colleges.* When the Council on Medical Education and Hositals published the last results of state board examination statistics, I was interested to know how the membership of the Association of American Medical Colleges showed up. I was pleased to find that the mortality was less than 2 per cent. Dr. Rypins also referred to a figure which reminded me of a study I made last year of the cost of medical education, also published in the *Bulletin.* The budgets of the class A medical schools totaled about $12,000,000, and of that sum the medical students contributed $4,000,000, so that the medical schools in a one year period put $8,000,000 into medical education. A few budgets are less than $200,000; two budgets are over $600,000. I might also refer briefly to a study Dr. B. D. Myers is making, for the Association of American Medical Colleges, of the applicants for admission to medical schools. The expense of this study is being met by the Commission on Medical Education. Two years ago, when the work was begun, in round numbers, 20,000 applications were made for admission to class A medical schools in the United States and Canada by 8,500 individuals. The highest number of applications made by any single person was nineteen. Of the 8,500, 5,500 were accepted, and of those 5,500 that were accepted 4,000 entered the freshman class. We followed up the 3,000-odd who failed to be accepted to find out what they did because our prime object was to know whether those fellows continued to prepare themselves to enter medical school and would apply again next year, or whether they gave up the idea of studying medicine entirely, or whether they were going to a chiropractic or osteopathic or some other cult school. That study is not quite finished yet, but in the main it shows that a large number, 3,000, continued to prepare themselves to apply next year. Some of them finally succeeded in getting into a school the same year.

The study for this year shows that nearly 25,000 applications have been made for admission by nearly 11,000 individuals. Of the 11,000, about 8,000 were accepted. There are enrolled in the freshman class this year 6,010. These figures can be used as an argument against the danger of a shortage of physicians. One student applied to thirty-seven medical schools and failed to get in. Two students applied to twenty-seven schools and finally got in. There were 124 students who applied to ten or more medical schools before they finally got in, and it is rather interesting that they did not all start at the top and work down, going to the strongest first. Some of them worked up and got into some of the best schools of the country, after as many as twelve, thirteen, fourteen or fifteen trials. We also have the data as to why the rejections were made, whether the class was full, or because of insufficient requirements, etc.

I am about to study, and will have ready for our next annual meeting, some data on the method of selection of students. I have tried to make up the mailing list, which is now almost 2,000 names, as carefully as possible; but if there is any one here who would like to have this book, I should be very glad to put his name on the mailing list if you will let me have it.

DR. HAROLD RYPINS, New York: Dr. Welch insists that the state boards should continue to check up on the education of the medical schools. The only way I know how to check up on the education of a school is to go to the school and spend three or four days there. Dr. Waite's statistics a few years ago showed that 63 per cent of the graduates of diploma mills were able to pass licensing examinations and get into practice in all but eleven states of the Union. An examination is the poorest possible check on medical education. I would rather know about the course a man had taken in the University of Chicago and have him fail our examination, which I think is a good examination, than have him come from a school I knew nothing about and pass the examination. The only other point I wish to speak of is this sensitivity about the dignified medical profession acting as police officers. That is a hangover from the tradition that state boards of medical examiners represent the medical profession. That is a fallacy. I think originally they did. The state boards of medical examiners, as I understand it, are officers of the state or commonwealth who are particularly assigned to the duties of taking care of matters of medicine, but they act not for the benefit nor as representatives of the medical profession. They act on behalf of the state because they are especially qualified individuals to do so, just as a lawyer who is appointed by the state to be a judge. He does not act on behalf of the bar. He acts for the state and the citizens of the state. We have got to get over the idea that in going out and doing what is really nothing but police work we as medical men, as members of the profession, for the profession are being policemen. That is a fallacy. We are people with special qualifications acting on behalf of the state. Furthermore, I do not think the medical people should have the funds to employ an attorney general or several attorney generals as special inspectors, but we should have a real machinery and we, because we know more about the subject, should be the directors of that machinery, not on behalf of the medical profession but on behalf of the public and protecting public health. If we change our point of view on that we shall clarify many of these issues.

Medical Licensure and Registration in Great Britain

SIR NORMAN WALKER, Edinburgh, Scotland: Up to the date of the passing of the medical act, physicians were looked on in the eyes of the law as holding a position analogous to that occupied by barristers—they were presumed to attend patients solely for an honorarium, and were therefore unable to recover fees by action in the courts. Surgery passed from the clergy, who were in 1163 prohibited from undertaking any

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"bloody operation," to the barbers, who had previously been the accustomed assistants of these monkish practitioners. They came to perform all surgical operations and became of such importance that in 1461 the Barber-Surgeons were incorporated by letters patent of King Edward IV. The apothecary rose out of the grocer or other tradesman who vended drugs. In 1814 an act was passed for "better regulating the practice of apothecaries throughout England and Wales." It was declared that all persons who should act or practice as apothecaries in any part of England or Wales without first having obtained certificates should be liable to a penalty of £20 for each offense. This law is still occasionally enforced on unqualified practitioners. The first evidence of state action with regard to the practice of physic dates back to the year 1422, in the time of Henry V. An act of that year specifies that no one shall use the mystery of physic unless he has studied in some university and is at least a bachelor in that science. In 1521, under Henry VIII, an act was passed forbidding any one to exercise and occupy as a physician or surgeon, except he be first examined, approved and admitted by the Bishop of London. The beginnings of education and recognition in Edinburgh date back to 1505.

It came about that a hundred years ago the medical profession might roughly be divided into four grades. There were (*a*) physicians who were necessarily graduates of a university, for no college of physicians admitted to fellowship any one who had not a doctor's degree; (*b*) surgeons who were members of a surgical corporation and were usually not graduates of a university; (*c*) general practitioners who were licensed to practice medicine or surgery by a corporation, and (*d*) apothecaries who compounded medicines and administered them to their own patients. It was not until 1858 that the first medical act received royal assent and became a law of the land. The Medical Act of 1858 established the General Council of Medical Education and Registration, and thus these two subjects were legally linked together. It was not perfect; our acts of parliament rarely are; and amending acts were required. It made provision for the establishment of a register of qualified practitioners and it set up—I must choose my words carefully—a sort of association conference of envoys, persons including one (or only half of one) from each of the licensing bodies, who were to meet, discuss and advise the different bodies, whose degrees and licenses gave admission to the first register, as to the conditions under which these should be conferred, if they were to be a passport for admission to the register in the future. It is an interesting light on the conditions at that time to note that in the council as first constituted there were eight university representatives, nine corporation ones and five crown nominees. The council, in its wisdom, left each degree or license conferring body to make its own conditions for its own license; but the act gave power to the council to inquire into the courses of study and examination leading up to the degree or license, and either by its own members or by persons deputed by them to be present at any examinations gone through in order to obtain the respective qualifications and to report whether these are "sufficient." The act gives the council very little—if any—direct power. If its inquiries lead to the conclusion that a particular degree or license is insufficient, the council has in itself no power to refuse to register it. Its duty is in such circumstances to report the fact to the Privy Council, with which subsequent responsibility rests.

But though its powers are small, a succession of very able presidents and common sense councils have made it a wonderfully efficient working instrument. It does not issue ukases; all the advice given by the education committee—the premier committee of the council—is issued in a series of "resolutions" (requirements for sufficiency) drawn up by the committee, passed (it may be after amendment) by the council and sent down to the bodies. These may, or may not, adopt them as they stand. Sometimes they adopt them at once; generally they adopt them essentially at an early date. This general tendency to acceptance is greatly contributed to by the composition of the council.

The 1858 act was supplemented in 1886 by a new act. The most important change was the insistence on a complete qualification in medicine, surgery and midwifery for admission to the register. Section 31 of the 1858 act runs as follows:

> Every person registered under this Act shall be entitled according to his Qualification or Qualifications to practise Medicine or Surgery or Medicine and Surgery, as the case may be, *in any part of Her Majesty's Dominions*, and to demand and recover in any Court of Law with full Costs of Suit, reasonable Charges for Professional Aid, Advice, and Visits and the Costs of any Medicines or any other Medical or Surgical Appliances rendered or supplied by him to his Patients.

But as time moved on the spirit of "daughters in our mother's house but mistress in our own" grew in the dominions and one by one they established medical organizations of their own. The only foreign countries with which we have reciprocity are Italy and Japan. There is no Irish question now. Ireland's membership of the council remains as it was. It will be convenient if I at this stage refer to another method by which graduates of the dominion and foreign universities in countries with which reciprocity has not been established may obtain admission to the register. For example, the Triple Qualification Board, of which I am a member, may exempt from all except final examinations candidates who hold the M.D. degree of an approved American university. Each application is considered on its own merits, but we have a general rule, made after my last visit here in 1920, that graduates of any American university who hold the diploma of the National Board may be admitted without further inquiry to the final examination. Every year the registrars of the three branch councils of England, Scotland and Ireland revise their registers, and the register of each year contains the name, address and registered qualifications of all those on the register on the first of January. If a registered practitioner has been convicted in England or Ireland of any felony or misdemeanor, or in Scotland of any crime or offense (these are simply different words expressing the same thing) the council takes into consideration the gravity of the offense and may if it sees fit direct the registrar to erase the name from the register. The accused person is entitled to appear and be represented by counsel, who commonly endeavors to show that the offense was not a serious one and had nothing to do with the medical efficiency of the accused. The council may, after due inquiry, judge a practitioner to have been guilty of infamous conduct in any professional respect. There is very little open advertising or open canvassing in Great Britain, but every now and again cases are brought before us. They do not grow any easier to determine. The really black sheep have been excluded from the flock, but there are varying shades of gray which the council is still from time to time compelled to consider.

The subject of most concern to us at present is that of certification. Section 37 of the Medical Act of 1858 states:

> After the First Day of July One Thousand eight hundred and fifty-nine, no Certificate required by any Act now in Force, or that may hereafter be passed, from any Physician, Surgeon, Licentiate in Medicine and Surgery, or other Medical Practitioner shall be valid unless the Person signing the same be registered under this Act.

When this section became operative, the number of certificates required was comparatively few. Recent legislation has multiplied them manifold and has brought under the notice of the council many cases where improper certificates had been signed by medical practitioners. Conviction for the performance of what is euphemistically called an "illegal operation" almost certainly involves the erasure of the practitioner's name. The council, too, takes a very firm line in cases in which there is any connection between professional and immoral relations. The erasure of a name from the medical register does not necessarily involve that it shall be for all time. Although there is no veto on medical and surgical practice in Great Britain, there are three subsidiary branches of medicine in which that principle is found. In 1902 for England, and in 1915 for Scotland, were passed acts "to secure the better training of midwives and to regulate their practice." The Venereal Disease Act was an outcome of the World War. It became law in May, 1917, and it prohibited under penalty the advertisement of venereal remedies. July 28, 1921, an act to amend the Dentists' Act of 1878 was passed. It went boldly out for prohibition—of dentistry—by unregistered persons and enacted that within two years of the passing of the act "no person unless he is registered in the dentists' register

shall practice or hold himself out, whether directly or by implication, as practicing or being prepared to practice dentistry."

Tendencies in Medical Practice

DR. H. G. WEISKOTTEN, Syracuse, N. Y.: A study was made of the graduates of the medical colleges of the United States for the years 1915 and 1920 in an effort to secure some information with regard to the present tendencies in medical practice. The study was based on questionnaires filled in and returned by 3,781, or 76.7 per cent, of the graduates to whom they were sent. The questionnaires returned showed a relatively uniform distribution as regards colleges represented and the years of graduation.

The main features of the study have to do with the nature of the work the men are doing, with especial reference to types of practice and salaried positions. Of the total number of graduates of both years returning the questionnaires, 37.9 per cent have already limited their practice to a specialty. The 1920 graduates showed a somewhat greater tendency toward specialization than did the 1915 graduates. If those not now limiting to a specialty carry out their expressed intentions, 73.7 per cent of the 1920 graduates and 66.3 per cent of the 1915 graduates will eventually limit their practice. The results of the study suggest that there are special tendencies toward specialization on the part of graduates of certain of the colleges. The three most popular specialties were eye, ear, nose and throat, internal medicine and surgery. Pediatrics, which ranked next in popularity, attracted nearly double the 1920 graduates that it did 1915 graduates. This is probably due to the demands created by the intensive public health educational work that has been directed toward child care during recent years.

Nearly 50 per cent of the graduates of both years living in communities of 100,000 population or over have already limited their practice to a specialty, as compared with less than 30 per cent of those in communities of less than 100,000 population. The results of the study suggest that there is an increasing tendency toward early specialization. A larger percentage of the 1920 graduates than 1915 graduates have limited their practice to a specialty without any preliminary general practice. Some form of salaried position is held by 34.6 per cent of all who returned the questionnaires. Full-time salaried positions are being held by 16.4 per cent and part-time salaried positions by 18.2 per cent. There seemed to be relatively little difference in the numbers of graduates of the two years holding these positions, but there was considerable variation in the nature of the positions.

A larger number of the hospital, teaching and research positions are occupied by 1920 graduates. On the other hand, the 1915 graduates are holding the larger number of veteran's bureau, army, navy and industrial positions. Nearly all of those who have limited their practice to certain of the specialties, such as laboratory, public health and hospital administration, are occupying full-time salaried positions, as are also relatively large numbers of those who have limited to neuropsychiatry and radiology. Although the results of the study are rather difficult to evaluate because of certain complicating factors, it does seem that there is an increasing tendency toward specialization and toward the full-time salaried position. *(To be continued)*

Purpose of Laboratory Training.—The chief purpose of a laboratory training is not to teach the students how to use elaborate instruments or to perform complicated chemical tests. The incalculable gift of the laboratory is its discipline in scientific method, and its training in the importance of logical reasoning and the use of exact language in speaking and in writing. The scientist is always distinguished from the empiricist by his accuracy in measurement, by his precision in statement, by his honesty in accepting and handling evidence, and by his fairness in presenting it when contesting the opinions of those in opposition to his own views. In that sense every general practitioner should be a research student, and the family doctor ought to train himself to employ scientific method at the bedside in the same masterly manner that it is used by the worker in the laboratory.—Ramsay, A. M.: *Brit. M. J.* **2**:1216 (Dec. 31) 1927.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

State Medical Meeting at Birmingham.—The annual meeting of the Medical Association of the State of Alabama will be held at the Tutwiler Hotel, Birmingham, April 17-20, under the presidency of Dr. John D. S. Davis. In addition to papers by Alabama physicians, the guest speakers will be Drs. Frederic W. Schlutz, Minneapolis, on "Present-Day Possibilities in Management and Treatment of Juvenile Diabetes"; Charles E. Dowman, Atlanta, Ga., "Remarks on Brain Tumors Based on a Study of One Hundred Verified Cases," with lantern slides; Walter E. Sistrunk, Rochester, Minn., "Surgical Treatment of Cancer of Colon with Reference to the Preoperative and Postoperative Care"; Louis J. Hirschman, Detroit, "Surgical Treatment of Anorectal Fistulas," with lantern slides; Allen H. Bunce, Atlanta, Ga., "Clinical Disorders of the Heart Beat"; John B. Deaver, Philadelphia, Jerome Cochran Lecture, "Pancreatitis"; James E. Paullin, Jr., "Use of Synthalin and Myrtillin in Diabetes Mellitus"; William F. Braasch, Rochester, Minn., "Differential Diagnosis of Lesions in the Urinary Tract," with lantern slides; Jacob Arnold Bargen, Rochester, Minn., "Newer Methods of Treatment of Chronic Ulcerative Colitis," and William F. Shallenberger, Atlanta, Ga., "Tubal Insufflation in Sterility." The program of entertainment includes luncheons, a tea given by Dr. James S. McLester, an alumni banquet, a reception and dance by the ladies' auxiliary of the Jefferson County Medical Society, a supper complimentary to the president given by Dr. Seale Harris, and special luncheons and teas for the ladies. The Alabama State Association of Railroad Surgeons will meet at the Tutwiler Hotel, April 17, at 8:00 p. m.

CALIFORNIA

"Lord" Blankenberg Arrested.—"Dr. Matthus Blankenberg, lord heir of the castle of Blankenberg," and present prince of the tribe of Isachor of Israel, was arrested at Thermal, recently, on a charge of violating the medical practice act. He is said to have had a large practice until his death certificates began to reach the undertaker. He pleaded guilty to the charge, March 3, in superior court, and was fined $300.

Health at San Diego.—Telegraphic reports to the U. S. Department of Commerce from sixty-eight cities with a total population of about 30 million, for the week ending March 10, indicate that the highest mortality rate (22.3) was for San Diego and that the mortality rate for the group of cities was 14.3. In the corresponding week last year, the mortality rate for San Diego was 28.5, and for the group of cities, 14.4.

In Memoriam.—The colleagues of the late dean of the Stanford University School of Medicine, Dr. Albion W. Hewlett, who died in 1925, have revised his book "Pathological Physiology of Internal Diseases—Functional Pathology," as a memorial. In the foreword the president of the university, Dr. Ray Lyman Wilbur, says "Dr. Albion Walter Hewlett, the author of this book, was primarily a trained physiologist who developed into a skilled practitioner. No one in America was better fitted to present the various subjects covered."

Improvement in Work of Students.—At the conclusion of each midterm examination period, the University of California sends out notices reminding students whose grades are not satisfactory that in order to continue their studies they will have to improve the quality of their work. The number of these notices sent out recently on the Berkeley campus was 3,730, out of a total of 11,145 students registered. This is 226 fewer than the number sent out following the midterm examinations of the spring semester last year, although the number of students enrolled is larger.

Speech Clinic for Children.—Fifteen children ranging from 4 to 14 years of age have already been registered for treatment at the speech clinic established at the University of California Institute of Child Welfare in Berkeley for the correction of speech defects. There is no age limit on the applicants for treatment. The clinic is open Saturday mornings from 9 to 12 and a course of corrective study is advised

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for the rest of the week. Mrs. Mabel F. Gifford, a member of the faculty of the University of California Medical School, started the clinic in December for the free treatment of such conditions as stammering, retarded speech resulting from illness and cleft palate.

Dentists Plan Study Fund.—The University of California College of Dentistry Alumni Association announces plans for accumulating a $50,000 fund, the interest of which will be used as a traveling fellowship to carry students of dentistry or allied subjects to other countries to study, or to bring students of other countries to California. The fund will be raised by an insurance plan. Alumni will be asked to take out a thousand dollar life insurance policy, the dividends from which will be turned into the alumni fund for the first five years. An alternative plan provides that alumni may give $50 to the fund at the rate of $10 a year and this will be invested in life insurance on a selected number of students at the school at a low rate. The secretary of the association under whose direction the plan is launched is George E. Steninger, D.D.S., San Francisco. The president of the university announced, February 19, that the faculty of the college of dentistry has voted to increase its course for a degree to five years, requiring one year of college work before admission to the college of dentistry and four years in the dental school.

DISTRICT OF COLUMBIA

Dr. Flexner Chosen to Give Kober Lecture.—Dr. Simon Flexner of the Rockefeller Institute for Medical Research, who has been chosen by the Association of American Physicians as the lecturer of the Kober Foundation for 1928, delivered a lecture at Georgetown University, March 27, on "Obvious and Obscure Infections of the Central Nervous System."

Amendments Kill Copeland Bill.—After a hearing on the Copeland bill, March 22, Senator Copeland is reported to have pronounced the bill dead as a result of amendments proposed by the chiropractors. Senator Copeland accepted several amendments offered but the chiropractors finally asked for the recognition of chiropractic as a branch of science which teaches the laws of animation and health, the cause of disease and a method of restoring health by the application of corrective measures without the use of drugs, principally by adjusting to remove vertebral and other subluxations. Senator Copeland objected, saying that they had finally put everything in the bill but the kitchen stove. Dr. Joseph S. Wall, representing the Medical Society of the District of Columbia, announced also that the society would withdraw its support of the bill. Senators Capper of Kansas and Jones of Washington supported the chiropractors. In an editorial, March 17, THE JOURNAL characterized this bill as a vicious measure, suggesting that, if passed, it might even permit the appointment of osteopathic surgeon generals of the army, navy and public health service. Failure to approve the Copeland bill leaves the district without an adequate medical practice act, and it is probable that legislation on this important question will be postponed until the next session of Congress.

Europe Objects to Washington "Diplomas."—Asst. U. S. Attorney Pearl McCall appeared before the subcommittee of the House District Committee, March 23, at a hearing on a bill to abolish diploma mills in the district. Attorney McCall is reported to have told the committee that one group of men had incorporated 200 "colleges and universities" in the city of Washington, and that these so-called schools had sent so many diplomas to students in Europe that the state department had been bombarded with protests from foreign countries. Attorney McCall gave the names of forty-one persons practicing in the district who, she said, received degrees in the "healing arts" after taking a three-day course of study. She displayed to the committee a diploma of a doctor of psychology, a doctor of science, a doctor of naturopathy, and a philosopher of chiropractic which had been bought by Joseph Kamermeyer, June 14, 1926, from the Central Chiropractic College. She explained the fight that was made to obliterate Oriental University, pointing out that in Connecticut alone, more than 400 degrees and diplomas bought in Washington had been canceled. In one conspiracy which the U. S. Attorney's Office is trying to break up, persons are under indictment in seven states. Miss McCall submitted a list of alleged medical degrees issued by a school incorporated by Gilbert Parker Brown. She said, according to the Washington *Star*, that this man testified before the grand jury that his educational qualifications were equivalent to the third grade in school. At one address in Washington, there are about fifty "educational institutions."

FLORIDA

Judgment Against Munch Reversed.—According to the Tampa *Tribune*, the federal court of appeals at New Orleans has reversed the judgment of the U. S. District Court at Tampa by which Dr. George A. Munch was found guilty, March 17, 1927, of the use of the mails to defraud in connection with an alleged diploma mill. The case has been remanded for further proceedings "not inconsistent with the opinions of this court." The defense cited thirty-seven alleged errors on the part of the trial court. Dr. Munch was formerly secretary of the state medical eclectic examining board, which was abolished in 1921. He, with fourteen others, was indicted for the use of the mails to defraud in the alleged sale of medical diplomas to would-be eclectic physicians.

Society News.—Dr. Stewart R. Roberts, Atlanta, Ga., addressed the Medical Study Club of Orlando, recently, on "Nephritis and Allied Conditions."——At a joint meeting of the Duval County Medical Society and the county tuberculosis association, Hope Haven, March 6, Dr. Harold D. Van Schaick read a paper on "Fractures and Injuries of the Spine," illustrated by lantern slides.——The February meeting of the Pinellas County Medical Society was addressed by Dr. Grace L. R. Whitford, Ozona, on "Nutritional Needs to the Third Year" and by Dr. Norval M. Marr, St. Petersburg, on "Nervous Indigestion."——The Lake County Medical Society, Eustis, was addressed, recently, among others, by Dr. Herrman H. Harris, Jacksonville, on "Cardiovascular Syphilis."——Dr. Joseph B. Davis, Daytona Beach, addressed the February meeting of the Volusia County Medical Society on "Middle Ear Diseases."

State Medical Meeting at Tampa.—The fifty-fifth annual meeting of the Florida Medical Association will be held at Tampa, April 3-4, under the presidency of Dr. John A. Simmons, Miami, and with headquarters at the Tampa Bay Hotel. About forty-one papers will be presented. Dr. George W. Crile, Cleveland, the guest of honor, will discuss "Factors Which Control End-Results of Operations on the Gallbladder and Thyroid Gland." Other papers will be presented by members of the profession in Florida. Among the subjects are synergistic analgesia in labor; cesarean section—type of operation indicated; intestinal obstruction; lung cancer; psychoses in which there may be a recovery; infant feeding; Brill's disease; heart block and gas anesthesia. There will be clinics, Monday noon, at the Tampa Municipal Hospital, a golf tournament, Monday afternoon, at the Palma Ceia Golf Club, a smoker in the evening, and for the ladies an opera presented by the Thallians followed by a reception. The annual banquet will be Tuesday evening ($3 per plate). There will be exhibits. The Florida Railway Surgeons' Association will hold its ninth annual meeting simultaneously.

GEORGIA

Personal.—Dr. Thomas J. Charlton has been appointed to succeed Dr. Craig Barrow as physician-in-charge of the Georgia Infirmary, Savannah.——Dr. Leo D. Parry has resigned from the roentgen-ray department of the John D. Archbold Memorial Hospital, Thomasville, to engage in practice in Lancaster, Pa.——Dr. Guy G. Lunsford, Weston, has been appointed health officer for Crisp County.

County Society Prizes for Research.—At the annual meeting of the Fulton County Medical Society, Atlanta, the Luther C. Fischer prizes of $100 each for 1927 were awarded, Dr. Madison Hines Roberts receiving that for the best original research work and Drs. Richard H. Wood and George A. Williams the prize for the best essay. The subjects were, respectively, "Relation of the Pigment Content in the Serum and Spinal Fluid of New-Born Infants" and "Primitive Human Hearts." Dr. Fischer, still desiring to stimulate study and research among the younger members of the society, has offered prizes for 1928. They were first awarded in 1926.

Two-Day Medical Meeting.—Under the auspices of the Clarke County Medical Society and the Athens-Clarke County Child Health Demonstrations, a two-day institute was held at Athens, March 7-8, with clinics at St. Mary's and the Athens General Hospital and talks on preventive medicine in the afternoon. About 100 physicians attended them. Dr. Joseph C. Bloodgood, Baltimore, gave an illustrated public lecture at the high school on "Cancer." Dr. William A. Mulherin, Augusta, president of the state medical society, who presided, gave an address in the morning on "Infant Feeding," and Dr. James R. McCord, Atlanta, on "Prenatal Care"; the following day, Dr. D. Lesesne Smith, Spartan-

burg, S. C., president of the South Carolina Medical Association, spoke on "Upper Respiratory Infection in Childhood," and Dr. Oliver C. Wenger, Hot Springs National Park, Ark., on "New Methods for Old Diseases"; Dr. Edson W. Glidden, Jr., Alto, exhibited a motion picture of diagnostic methods in tuberculosis.

CHICAGO

Drs. Millstone and Zaph Expelled.—At a meeting of the council of the Chicago Medical Society, March 13, the report and recommendations of the ethical relations committee which was submitted was adopted. Among the cases was that of Dr. James T. Gregory versus Dr. Henry J. Millstone. Dr. Millstone was charged with unethical advertising; he failed to appear. The committee, after considering the evidence introduced, recommended that Dr. Millstone be expelled from membership. Another case was that of Dr. Gregory against Dr. Stamatis D. Zaph. Dr. Zaph was charged with unethical conduct as a result of his association with "Dr. Schireson" and because he is professor of surgery at the Osteopathic Hospital and College. Both Drs. Zaph and Gregory appeared before the committee and, after listening to the testimony, the committee recommended that Dr. Zaph be expelled from membership.

Personal.—Arthur H. Compton, Ph.D., professor of physics, University of Chicago, addressed the West Virginia Chapter of the Society of Sigma Xi and the West Virginia Scientific Society, February 23, on "What Things Are Made Of."——Dr. Thomas R. Ponton, formerly superintendent of the Hollywood Hospital, Los Angeles, is now associated with the Gorgas Memorial Institute, Chicago.——Dr. Irving S. Cutter will give a Mayo Foundation lecture at Rochester, Minn., April 6, on "Side Lights in the Etiology of Puerperal Fever."——Dr. Lucius H. P. Zeuch addressed the Medico-Historical Club at the University of Illinois College of Medicine, Chicago, March 21, on "The History of Medical Practice in Illinois Preceding 1850." Dr. Zeuch recently compiled a history of medical practice in Illinois under the sponsorship of the state medical society.——The chairmanship of the Chicago division of the Leonard Wood Memorial for the Eradication of Leprosy has been accepted by Col. Albert A. Sprague.

Society News.—At the April 18 meeting of the Chicago Medical Society, Dr. John A. MacGregor, London, Ontario, will present a paper on "Arthritis." The March 28 program included a symposium on peptic ulcer, the speakers being Drs. John D. Koucky, Richard H. Jaffe, Adolph Hartung, Charles S. Williamson and Carl A. Hedblom. The northside branch of the society will meet in conjunction with the Seminar Club of Northwestern University Medical School, April 5. The scientific program will include papers by Dr. James T. Case, Battle Creek, Mich., on "Clinical Application of Cholecystography and Its Evaluation Based on Operative Findings"; A. B. Kellogg, Ph.D., and Bertram Feuer, Ph.D., "Studies on Purified Principles of Squill with Moving Pictures of the Beating Heart"; Dr. Andrew C. Ivy, Grant Kloster, Ph.D., Dr. Eric Oldberg and H. C. Lueth, B.S., "Demonstration of Contraction of Gallbladder Caused by Cholecystokinin."——The Medical and Dental Arts Club has been formally opened and a custom has been established of having a dinner and bridge party for women guests in the club Wednesday nights in connection with meetings of the Chicago Medical Society. The Chicago Laryngological and Otological Society will meet in the club rooms on the twenty-second floor of the Medical and Dental Arts Building, April 2. The program will include "Some Bronchoscopic Observations" by Dr. Edwin McGinnis, and "Demonstration of Auditor with Remarks on Theories of Hearing" by William T. Bovie, Ph.D., professor of bio-physics, Northwestern University Medical School.

INDIANA

Society News.—Dr. Albert E. Sterne, Indianapolis, addressed the St. Joseph County Medical Society, February 15, on "Some Factors in the Criminal Equation."——Dr. Budd Van Sweringen addressed the Fort Wayne Medical Society, February 21, on "Fistula Following Cesarean Section."——Dr. Charles H. Mayo, Rochester, Minn., addressed the Indianapolis Academy of Medicine, March 16, on "Aids in Reducing Surgical Mortality."

Briggs Guilty—Sentence Suspended.—Otis J. Briggs, dean of the "College of Drugless Physicians," Indianapolis, was found guilty, March 17, of subornation of perjury in connection with the operation of an alleged diploma mill. Sentence was suspended with the understanding that Briggs will have nothing more to do with any healing cult school or attempt to practice any sort of therapy in Indiana. Judge Collins, in making his decision, expressed sorrow for the family of Briggs, and denounced schools of the type that Briggs was operating (THE JOURNAL, February 11, p. 468).

Dr. Earp Honored.—At the annual meeting of the northern province of the Phi Beta Pi Medical Fraternity, Indianapolis, March 9, it was voted to establish a lectureship at the Indiana University School of Medicine in honor of Dr. Samuel E. Earp, a patron of the fraternity, to be known as the Dr. Samuel E. Earp Lectureship Fund. The northern province, comprising Indiana, Michigan, Illinois, Wisconsin and Kentucky, will support the fund unaided. The delegates to the annual meeting, numbering about 100, and others were guests of the James Whitcomb Riley Hospital at luncheon. Dr. Ernest Rupel, Indianapolis, was reelected alumni president of the northern province of the fraternity.

University News.—The subdepartment of surgery of the Indiana University School of Medicine, Indianapolis, dealing specifically with surgery of the head and neck, including the central nervous system, has been discontinued since the resignation of Dr. John F. Barnhill and is provided for in the department of general surgery and diseases of the ear, nose and throat. Since the death of Dr. John H. Oliver, head of the department of surgery, and of Dr. Orange G. Pfaff of the department of gynecology, the latter department has been made more closely a subdepartment of surgery, although with its individual organization left intact. Dr. Willis D. Gatch, as previously announced, has been made head of the department of surgery.

Reunion After Fifty Years.—Five of the seven surviving members of the class of 1878 of the old Indiana Medical College held a golden jubilee reunion at the Claypool Hotel in Indianapolis, February 28. Those who attended the meeting were Drs. Herbert B. Tanner, Eastland, Texas; Amos Carter, superintendent of the Indiana State Sanitarium at Rockville; Thomas B. Plowman of Georgetown, Ill.; Allen Pierson of Spencer and James H. Taylor, Indianapolis. The other surviving members of the class are Robert A. Ferguson of Bellair, Ill., and Dr. Frank F. Whetzel of Chicago. Both were unable to attend the meeting. All of the group are over 70 years of age with the exception of Dr. Taylor. The outstanding events of the jubilee were a tour through the Indiana University School of Medicine, a luncheon at the James Whitcomb Riley Hospital for Children, and a reunion at the Claypool Hotel.

IOWA

Annual Clinic.—The annual medical clinic of the State University of Iowa College of Medicine will be held at Iowa City, April 10-11. Dr. Dallas B. Phemister, professor of surgery, University of Chicago, will give an address, Tuesday evening, April 10, and Dr. Louis B. Wilson, Rochester, Minn., will give an address on Wednesday.

KENTUCKY

Personal.—Dr. James O. Carson celebrated the completion of his fiftieth year of medical practice in Bowling Green, January 31, to which were invited the members of the staff of the city hospital and other physicians throughout the city.

Chiropractors Allowed Separate Board in Kentucky.—Governor Sampson signed a bill, March 7, which provides for the creation of a separate board of three chiropractic examiners to be appointed by the governor. The vote in the senate on the bill was 23 to 12. It was opposed, among others, by Senator Perry of Louisville and Senator O. V. Brown of McLean County, who is a doctor of medicine.

Plans for Graduate Course.—Dr. Philip F. Barbour, Louisville, has been appointed by the state board of health to supervise plans for a graduate course of instruction in Louisville to be available to physicians throughout the state. The time suggested as most convenient is the first two weeks in July. Opportunities will be afforded to review physical diagnosis, to learn new laboratory methods in blood and sputum work and the routine of periodic health examinations, and to attend clinics and make ward rounds in the hospitals. The county societies are requested to consider the plans and to suggest topics for discussion. Comments from interested physicians anywhere in the state as to how to make this course most useful will be appreciated.

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MASSACHUSETTS

Bill Introduced.—Senate bill 262 provides for the revision and consolidation of laws relating to narcotics and the practice of pharmacy.

Sir Humphry Rolleston Temporary Physician-in-Chief.—Sir Humphry D. Rolleston, regius professor of physic at Cambridge, England, was in residence at the Peter Bent Brigham Hospital, Boston, as the fourteenth physician-in-chief, pro tempore, for the week beginning March 25, in charge of the medical service of Dr. Henry A. Christian, physician-in-chief of the Peter Bent Brigham Hospital, Boston.

State Pronounces Typhoid Carrier "Cured."—John Mentzer, Bolton, who was considered to be the cause, as a carrier, of fifty-one cases of typhoid in November, 1926, has been pronounced "cured" by the state department of health following numerous examinations and an operation for removal of the gallbladder. The last examination was made one year after the gallbladder was removed. The Public Health Council has approved the decision of the department. The Boston *Transcript* says that this is the first case of "cure" of a typhoid carrier to be affirmed by a state health department. Other typhoid carriers have been operated on, but a year has not yet elapsed since the operation.

Changes in Trustees of Massachusetts General Hospital.—After a service of thirty-two years, Mr. George Wigglesworth, Milton, has resigned from the board of trustees of the Massachusetts Hospital, Boston. Since the resignation of Dr. Henry P. Walcott in 1918, Mr. Wigglesworth has been chairman of the board. Mr. Charles W. Foster, after twenty-five years' service as a member of the board and, since 1908, treasurer of the hospital, has also resigned. The service of these two men has been of inestimable value. The successors will be Mr. William Endicott as trustee and chairman, and Mr. Phillips Ketchum as trustee and treasurer. Mr. Endicott has been a member of the board for a number of years. The other vacancy on the board has been filled by the election of the Rev. Henry K. Sherrill of Trinity Church, Boston.

Personal.—Dr. Clifford L. Derick has been appointed physician to the Peter Bent Brigham Hospital to succeed Dr. Cyrus C. Sturgis, who accepted a professorship at the University of Michigan, Ann Arbor. Dr. Derick was for three years at the Montreal General Hospital; he then was a fellow of the National Research Council, an assistant resident physician at Peter Bent Brigham Hospital, and since 1924 assistant resident physician at the Rockefeller Institute for Medical Research, New York.——Dr. James I. Knott, St. Louis, has been appointed resident physician at the Pondville Hospital, Norfolk.——Dr. Arthur Wakefield has been appointed supervisor of the tuberculosis clinics which are being held in schools throughout the state by the state department of health; Dr. Wakefield has been engaged for years in medical work in China.——Sir Wilfred T. Grenfell gave an address at the Old South Forum, Boston, March 18, on "The Challenge of Labrador." Sir Wilfred has devoted his life to the medical care of the fishermen of Labrador.——Dr. Stanley Cobb, Bullard professor of neuropathology at the Medical School of Harvard University, is on leave for the second half of the current academic year and will go to Munich to work in neuropathology and psychiatry.

MISSISSIPPI

Society News.—Among others, Dr. Peter Whitman Rowland, Jr., Memphis, Tenn., addressed the Thirteen Counties Medical Society at its quarterly meeting, March 13, at Booneville, on "Spontaneous Massive Atelectasis of the Lung."

Personal.—George E. Vincent, Ph.D., president of the Rockefeller Foundation, New York, made a tour of inspection of field work in several county health departments in the flooded area, and was the guest of the state health department, March 1. Dr. Vincent addressed the citizens of Indianola and those in training at the public health school, and then left for Florida to be the guest of Mr. John D. Rockefeller, Sr., for a vacation.

Visit of Health Cars.—The Louisiana State Board of Health sent its "health cars" in February to Mississippi at the invitation of the state health officer, Dr. Felix J. Underwood. About 1,500 people saw the exhibits at McComb, and more than 2,000 at Brookhaven. These communities are becoming dairy centers from which milk is shipped into New Orleans. Their citizens are cooperating with the state board of health to improve the sanitary conditions under which milk is produced. Scores of barns have been built and many old ones renovated. Several hundred samples of milk from dairies were examined by the technician on the health cars. Dr. Oscar Dowling, state health officer of Louisiana, was in charge of the exhibits.

MISSOURI

Osteopathic Hospital in Receiver's Hands.—The Liberty Hospital, St. Louis, which for four years was a private osteopathic institution, has been sold under a receivership for $252,000 and will be used in the future as an old peoples' home conducted by the Good Samaritan Altenheim, supported by the Evangelical churches of the district. The receiver announced that the investors in the osteopathic enterprise might expect 35 cents on the dollar.

Special Evening for Past Presidents.—The St. Louis Medical Society has arranged a special program, to be given, April 10, in honor of past presidents of the society. The speaker of the evening will be Dr. William Allen Pusey, Chicago, Past President of the American Medical Association. Following the address, a reception will be given in the banquet hall of the society building. It is hoped that all members of the society and their friends will be present.

Personal.—Dr. Jesse E. Douglass, Ah-gwah-ching, Minn., has been appointed superintendent of the Jasper County Tuberculosis Hospital, Webb City, to succeed Dr. Varney Hazlewood, resigned, who has held the position for about nine years, and who expects to study in New York previous to entering practice in Indiana.——The Saline County Medical Society gave a banquet, March 7, in honor of Dr. Francis A. Howard of Slater, who has completed fifty years in the practice of medicine. In the party of fifty-three persons present were physicians and officers who have been relatives or friends of the guest of honor for many years. The toastmaster was Dr. David F. Manning, Marshall. Among the speakers were Judge Rich of Slater and Senator G. H. Williams of St. Louis.

MONTANA

Rocky Mountain Spotted Fever.—The wood ticks will emerge soon from their winter quarters and remain active until about July 1. The state department of health says that there is no way of distinguishing a tick infected with Rocky Mountain spotted fever from an uninfected tick except by animal experimentation, and that all persons in this region should protect themselves against the tick. There is evidence that the vaccine developed by the U. S. Public Health Service in the laboratory at Hamilton is of value in preventing spotted fever. As long as the supply lasts, it will be furnished free. Requests should be sent to Dr. Roscoe R. Spencer, U. S. Public Health Service, Hamilton, Mont., and not to the state board of health. The state board of entomology is attempting to get rid of the ticks by means of a parasite which it expects to liberate to the number of 120,000 each week from April 1 to July 1 in the upper LoLo Valley, on upper O'Brien Creek west of Missoula, in Owl Canyon near Bozeman at a point near Helena, in Musselshell County, on the upper Powder River in Eastern Montana, and in either Fergus or Garfield County. Whether or not this parasite will endure the Montana climate remains to be seen. Spotted fever, since 1914, has occurred in thirty-five of the fifty-six counties of the state. Previous to that time, it was confined to three counties. The average number of cases, annually, since 1914, has been thirty-one, and the average number of deaths, nine. The greatest number of cases (fifty-six) occurred in 1922. Last year there were thirty-seven cases and five deaths.

NEW JERSEY

Bill Introduced.—House bill 194 authorizes the board of health to conduct examinations to determine the training of applicants for the positions of health officers and sanitary and plumbing inspectors.

Hospital News.—The Burlington County Hospital will be ready for occupancy about April 1. The $450,000 fund was subscribed by about 11,000 people in the county. The new building, which is opposite the old hospital on Madison Avenue, Mount Holly, will accommodate 100 patients.

Society News.—The Camden County Medical Society held a symposium, February 14, on arthritis, the speakers being Drs. Benjamin F. Buzby, Thomas M. Kain and David F. Bentley.——Dr. George Blackburne, Newark, addressed the Mercer County Medical Society, February 8, on "Gastric and

Duodenal Ulcer."——Dr. John A. Kolmer, Philadelphia, addressed the Middlesex County Medical Society, New Brunswick, recently, on "Chemotherapy of Bacterial Infections."——Dr. John J. Gilbride, Philadelphia, will give an illustrated lecture before the Cumberland County Medical Society, Bridgeton, April 3, on "Diagnosis and Surgical Treatment of Diseases of the Gallbladder," and before the Salem County Medical Society, Salem, April 11, on "Indications for Operations on the Stomach."

NEW YORK

Personal.—Joseph Klausner, aged 12, a patient in the clinic of the New York Post-Graduate Medical School and Hospital, who walks with the aid of braces and canes, has been awarded second prize by the New York State Chamber of Commerce in a contest for the best essay on "Cooperation," which was open to children of the seventh grade of the elementary schools of Manhattan. The New York State Chamber of Commerce is the oldest chamber of commerce in America.

Society News.—Dr. Edward L. Keyes, professor of clinical surgery, Cornell University Medical College, New York, will address the surgical section of the Buffalo Academy of Medicine, April 4, on "Treatment of Surgical Diseases of the Kidneys," and Dr. Joseph C. Aub, Boston, the medical section, April 11, on "Internal Secretions."——Drs. Kenneth R. McAlpin addressed the Medical Society of the County of New York, March 26, on "Lymphocytosis: Its Clinical Importance"; Thomas Ordway, Albany, "Pernicious Anemia," and Allen O. Whipple, "Splenectomy in Certain Types of Purpura."

Outbreak of Gastro-Enteritis.—Following a party at Ellenville, February 8, at which 357 persons ate supper, about 200 cases of acute gastro-enteritis developed. An investigation disclosed that the illness was due to an organism of the paratyphoid enteritidis group which had been isolated from the pork and ham sandwich filling. The state laboratory and a private laboratory in New York made similar reports. The pork and ham for the sandwiches were boiled in the morning before the party, after which they were ground in a butcher's meat chopper, the pork being ground first without the machine having been cleaned.

Hospital Gives Patients Disability Rating.—The Buffalo City Hospital, Buffalo, is conducting a unique experiment in hospital administration in that it gives every patient discharged from the hospital a disability rating. The terminology followed is the nomenclature of the New York State Industrial Commission—permanent total, temporary total, permanent partial and temporary partial disability. According to the *Survey* the plan was adopted to save a great deal of time taken up by court testimony, particularly in compensation cases. The assistant medical superintendent in charge of the admission and discharge department has been detailed to examine patients at the time of discharge. He notes and checks conditions recorded by the various specialists, and thus has a complete view of the case. He records in a brief abstract in affidavit form the kind and percentage of physical disability, and this abstract has been accepted in court as medical testimony without the presence of the affiant in about 80 per cent of the cases. The local compensation committee has endorsed the method of presenting these abstracts in court.

New York City

Sixth Harvey Lecture.—Dr. E. J. London, director of physiology, University of Leningrad, Leningrad, Russia, will deliver the sixth Harvey Society Lecture at the New York Academy of Medicine, April 13, on "Experimental Fistulas of Blood Vessels."

Folks Urges Fifty-Four Additional Health Centers.—The editor of the *New York Medical Week* calls attention to the last issue of *Better Times* in which Mr. Homer Folks, secretary, State Charities Aid Association, is said to have urged the establishment of fifty-four additional health centers in Greater New York. The city now has six health centers. The editor questions whether New York is so needy that sixty centers are required in addition to the hospital facilities of the city to take care of the health needs of those who cannot afford private medical care.

Kings County Requests Investigation of Bureau.—The Kings County Medical Society has requested Prof. Lindsay Rogers, LL.B., of Columbia University to investigate the Wolf Industrial Bureau, 61 Second Avenue, Manhattan. The medical society has raised the question whether the Wolf Industrial Bureau is illegally practicing medicine. The president of the bureau is said to have stated that his company attends to the administrative details and business arrangements in connection with the work of physicians handling compensation cases. The bureau is said to have twenty offices in which treatment is given.

Medical Information for the Press.—At a meeting of representatives of the press with the New York Academy of Medicine and the New York County Medical Society, it was announced by Dr. Thomas J. Harris, the presiding officer, that committees of both societies would recommend to the parent organizations the establishment in New York City of a bureau, the obligations of which would be to give immediate information to the press at any time. This was done at the suggestion of a representative of the Associated Press, and was indorsed by representatives of other press associations and New York newspapers. The conference was called in an effort to learn how to set forth authoritative medical information and offset harmful quackery. The action was regarded as significant in view of the traditions of the academy of medicine in opposition to advertising and publicity.

Government Seizes Five Tons of Quinine.—The U. S. Government has begun an antitrust drive with the seizure of 5 tons of quinine stored with R. W. Greeff & Co., 94 Pearl Street. The quinine is locked up in the U. S. Army Base in Brooklyn. The Kina Bureau, representatives of Dutch quinine manufacturers, is alleged to be the center of a trust which controls about 95 per cent of the cinchona bark grown on the Island of Java. The New York *Times* says, however, that the inquiry involves other companies. Dutch manufacturers have obtained control of practically the entire supply of cinchona bark. The Kina Bureau is alleged to have forced other companies needing quinine to take part of the oversupply in 1922 and hold it under the threat that, if disposed of, they would not be given any more. Thus, the United States, which uses about 40 per cent of the world's supply of quinine, had to pay a higher price. It is also charged that Dutch quinine manufacturers had combined with others to cause the restriction of the supply of cinchona bark, had apportioned the world's supply by agreement among manufacturers and had fixed prices so that American manufacturers had to obey their dictation. The inquiries proceeded under the Wilson Tariff Act. The penalty on conviction on each count is a year's imprisonment and a $5,000 fine. The 5 tons of quinine seized will be sold at auction, as soon as libel proceedings against it are ended. The government is expected to seize the cinchona bark stored here, which would supply enough quinine to meet the demands of dealers in the United States for at least a year.

OHIO

Violations of Medical Practice Act.—Fifty-five successful prosecutions for violation of the medical practice act of Ohio have been instituted by the state medical board since November, 1927, and about twenty cases are pending. The secretary of the board submits a list of eight chiropractors who were fined for illegal practice in the municipal court of Canton, March 20; of four unlicensed chiropractors who were tried at Bucyrus, and of two chiropractors who were convicted at Celina.

Society News.—At the March 16 meeting of the Academy of Medicine of Cleveland, Dr. Earl W. Netherton read a paper on "Late Skin Manifestations of Tertiary Syphilis"; Dr. Lemuel R. Brigman on "New Method of Treatment of Congenital Syphilis in Infants," and Dr. Clyde L. Cummer, "Tertiary Involvement of Lymphatic Glands in Syphilis." Dr. George E. Follansbee will give a lecture in the special series under the auspices of the academy and the Cleveland Medical Library Association, April 19, on "Why Traditions, Ideals and Ethics," and Dr. Frank E. Bunts on "Observations on the Development of Antiseptic Surgery During the Past Forty Years." The lectures in this series, March 12, were given by Drs. Charles W. Stone on "The Golden Age and the Golden Rule," and Samuel W. Kelley on "Doctors and Debtors."——The Hancock County Medical Society was addressed, February 8, by Drs. Farrell T. Gallagher on "Surgery of the Diabetic Patient" and James R. Ripton, both of Cleveland, on "Surgery of the Thyroid."——The Toledo Academy of Medicine was addressed, March 2, by Dr. Roy W. Scott, associate professor of medicine, Western Reserve University School of Medicine, Cleveland, on "Facts on the Heart: Clinical and Pathologic Observations on 600 Autopsy Cases."

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Hygeia Hall at Wooster College.—The new Wooster College hospital, Hygeia Hall, was opened, February 27. A friend of the college contributed about $130,000 for the building and sufficient endowment to cover operating expenses. The building is Gothic, harmonizing with the other college buildings, and of fireproof construction; a portion of the roof is tiled for open-air treatments. In beauty and equipment, Hygeia Hall is said to be in the front rank of college infirmaries in America. There are isolation rooms on the third floor and nurses' quarters. The second floor has wards and single rooms, and the first floor, offices. Students entering Wooster College are required to have a physical examination. Defects found are reported to the department of physical education, so that athletic work may be properly assigned and, when deemed necessary, parents are advised of the physical defects found. There is a required course in hygiene for students that covers contagious diseases, personal hygiene and habits and the relation of hygiene to organized society. The health service fee is $10 per year. Members of the faculty and their families cannot participate. Eating houses off the campus, the milk, water and food supplies, and all college food handlers are inspected by the director of the student health service, Dr. Herbert A. Wildman.

OKLAHOMA

Personal.—Dr. Lang A. Mitchell, physician to the Stillwater Agricultural and Mechanical College, has been appointed county health officer of Payne.——Dr. Frank D. Dickson, Kansas City, Mo., addressed the Okmulgee-Okfuskee county medical societies, February 13, on "Fractures of the Upper Extremity."——Dr. Basil A. Hayes, Oklahoma City, gave a lantern slide demonstration on disease of the rectum before the Stephens County Medical Society, Duncan.——The Pontotoc County Medical Society, Ada, sponsored a skin and cancer clinic which was held by Dr. Charlie P. Bondurant, Oklahoma City, February 28.

PENNSYLVANIA

County Society Gives Course on Cancer.—At the request of the Pennsylvania State Commission on Cancer, the Philadelphia County Medical Society is arranging a special intensive course for the study of cancer, May 22-24, for all physicians interested. Sessions are to be held morning, afternoon and evening. The mornings are to be devoted to special clinical demonstrations on diagnosis, treatment and results, in the centrally located teaching hospitals of Philadelphia. A free buffet luncheon is to be served, so as to conserve time and prevent scattering. Details of the program will be published later. The registration fee is $5. Physicians interested are requested to register at once with Franklin M. Crispin, executive secretary, the Philadelphia County Medical Society, southeast corner of Twenty-First and Spruce streets, Philadelphia.

Society News.—The Northampton County Medical Society meeting, March 16, at Bethlehem, was turned over to Drs. William L. Estes, chairman of the committee on public health and legislation, and Paul R. Correll, Easton, chairman of the state committee on public health and legislation; later, Dr. Henry R. M. Landis, Philadelphia, gave an address on "Tuberculosis."——The Schuylkill and Northumberland county medical societies sponsored a dry clinic at the Locust Mountain State Hospital, Shenandoah, March 6; the guest of honor was Dr. John H. Jopson, professor of surgery, University of Pennsylvania Graduate School of Medicine, Philadelphia.——The annual dinner of the Lackawanna County Medical Society, Scranton, February 28, was in honor of Dr. Leonard G. Redding; the address was made by Dr. Arthur C. Morgan, Philadelphia, president of the state medical society.——The February meeting of the Erie County Medical Society was addressed by Dr. John L. Eckel, Buffalo, on "Early Recognition of Syphilis of the Central Nervous System and Its Treatment."

Philadelphia

New University Trustees.—At a meeting of the board of trustees of the University of Pennsylvania, March 20, final approval of the revision of statutes, which had governed the university since colonial days, was given by the board. Eleven new trustees were elected at this meeting, and among them were Josiah H. Penniman, Ph.D., and Dr. Alfred Stengel.

New Bronchoscopic Clinic.—Through the generosity of Mr. Frederick S. Bigelow, a completely equipped new bronchoscopic clinic was opened, March 31, on the tenth floor of the new hospital of the Graduate School of Medicine of the University of Pennsylvania. The clinic will have its own waiting, consulting, examining, anesthetizing, sterilizing and operating rooms, and will be in charge of Dr. Chevalier Jackson, in whose honor it is named.

Personal.—Dr. John Norman Henry was recently elected president of the University Club of Philadelphia.——A testimonial dinner was given to Dr. Edward B. Gleason, recently, on the occasion of his fiftieth anniversary as a practicing physician by his friends and associates and members of the otolaryngologic group of the 1928 class of the University of Pennsylvania Graduate School of Medicine. Dr. Gleason was presented with an engraved writing set. The principal speakers were George H. Meeker, Sc.D., and Dr. Ralph Butler.

RHODE ISLAND

Annual Conference on Mental Health.—The second annual New England Conference on Mental Health, conducted under the auspices of the Rhode Island, Connecticut and Massachusetts societies for mental hygiene, was held, March 24, at the Plantations Club, Providence. The principal speaker at the evening session was Dr. William A. White, superintendent, St. Elizabeth's Hospital, Washington, D. C.; his subject was "Contribution of Psychiatry to the Problem of Crime." George W. Kirchwey, head of the department of criminology, New York School for Social Work, spoke on "Place of Psychiatry in the Administration of Justice." William H. Harper, chief probation officer of Rhode Island, at the afternoon session discussed "What Makes a Juvenile Delinquent" and Arthur P. Stone, justice of the East Cambridge District Court, spoke on "Understanding the Juvenile Delinquent."

PHILIPPINE ISLANDS

Medical Elections.—The officers of the Philippine Islands Medical Association for 1928 are: Drs. Liborio Gomez, Manila, president; Maria Paz Mendoza-Guazon, Manila, and Leoncio Lopez Rizal, Manila, vice presidents, and Antonio S. Fernando, Manila, secretary-treasurer.——The new officers of the Manila Medical Society are Drs. Jose S. Hilario, president; Guillermo Rustia, vice president, and Agerico B. M. Sison, secretary-treasurer.

GENERAL

Clinics for Rush Alumni—Date of Dinner Changed.—Rush Medical College is arranging for three days of special alumni clinics from June 7 to 9, preceding commencement. To prevent conflict with the annual session of the American Medical Association in Minneapolis, the Rush faculty and alumni dinner, at which an oil portrait of Dr. James B. Herrick will be presented to the college, will be advanced to Saturday evening. Alumni wishing to contribute to the fund for the painting of Dr. Herrick may send checks to Dr. Samuel R. Slaymaker, 1758 West Harrison Street, Chicago.

Second Report of Commission on Medical Education.—The second report of the Commission on Medical Education has been published as of January, 1928. The book contains five chapters of data, with a summary and six appendixes. The summary indicates the scope of this inquiry, which is now in its third year. There is a chapter on the data and opinions of state medical boards, one on a further study of the demands on medical practitioners, and one pertaining to the type of practice and previous training of 1,600 successful physicians from 400 communities, with the opinions of these physicians as to some of the elements in medical education.

Winter Automobile Deaths Increased.—In the four weeks ending February 25, automobile accidents were responsible for 510 deaths in seventy-seven large cities of the United States, as compared with 441 deaths for the corresponding period last year. For the fifty-two weeks ending February 25, the total number of automobile deaths for these cities was 7,196, as compared with 6,740 deaths in the fifty-two weeks ending Feb. 26, 1927, or an increase in the rate per hundred thousand of population of 5 per cent in a single year. Since May, 1925, the lowest number of automobile deaths in a four week period was 346 in the period ending March 27, 1926.

Ella Sachs Plotz Foundation.—The Ella Sachs Plotz Foundation for the Advancement of Scientific Investigation, during its fourth year, received fifty-five applications for grants, twenty-one coming from the United States and thirty-four from eleven countries in Europe and Asia. The

research work which the foundation aids is directed toward the solution of medical problems or others that bear on medicine. The grants may be used to purchase apparatus and supplies for special investigation, but not for apparatus or materials ordinarily a part of laboratory equipment; stipends will be granted only under exceptional circumstances for the support of investigators. Four of the investigations each year have been on the general subject of chronic nephritis; other general subjects favored to a less degree were infection and internal secretion. Application for grants should be made to Dr. Joseph C. Aub, Massachusetts General Hospital, Boston 14, before May 15.

News of Epidemics.—About 1,200 pupils and sixteen teachers were reported absent from the public schools of Decatur, Ill., March 22, on account of "bad colds and influenza."—— An epidemic of influenza was reported at Georgetown, Ky., and surrounding communities, March 15; a large number of pupils in the schools were affected and, in some cases, entire families.——A girls' sorority house at Northwestern University, Evanston, Ill., was quarantined, March 21, owing to an outbreak of scarlet fever.——The public schools of Bakersfield, Mo., were reported closed, March 16, on account of an influenza epidemic.——The newspapers, March 15, reported that influenza had been spreading over the state of Iowa for three weeks and was continuing unabated; schools in some places had been closed. Reports of influenza outbreaks have been noted at Albert Lea, Minn., in southern Illinois and in the city of Alton, and in McNairy County, Tenn. A large number of people appear to be afflicted in these communities, but the mortality rate has not been, as yet, much affected. ——An outbreak of thirty-four cases of smallpox was reported in Monongalia County, W. Va., March 13.

Origin of Scientific Men (Concluded).—Continuing his discussion of the origin and distribution of scientific men, noted in THE JOURNAL, February 18, James McKeen Cattell, editor of *Science*, says that the first scientific man to receive a degree of doctor of philosophy from Yale was Josiah Willard Gibbs in 1863. Yale gave eighteen doctorates in the sciences prior to 1876; Harvard, four, Columbia and Cornell, each two. Johns Hopkins University was then established, and in the following twenty years it conferred 179 doctorates in the sciences. The universities of the United States up to 1910 had conferred 2,513 doctorates for work in the sciences. Johns Hopkins conferred 434; Chicago, 276; Yale, 271; Columbia, 268; Harvard, 267; Cornell, 222; Pennsylvania, 172; Clark, 150, and all the others, 453. Among the 601 scientific men whom Dr. Cattell has added in the third and fourth editions of "Biographical Directory of American Men of Science" to his original list of those whose contributions to science have been of the greatest value, Harvard University is foremost with sixty-two doctors of philosophy, three doctors of medicine and forty-one bachelors. Now, however, Harvard is surpassed by Chicago in the number of doctorates, as it was by Johns Hopkins at the earlier period. After these three schools come Columbia, Yale, Pennsylvania, Cornell and California. Another change which the author notes is the number of younger scientific men who have studied at foreign universities. Of the thousand selected in 1906 there were 117 who had studied in Berlin, eighty-four in Leipzig, sixty-nine in Göttingen and fifty-six in Heidelberg, and a large proportion had received degrees from these and other German schools. Of the contemporary 601 scientific men added to the author's book, only one has a degree from Berlin and none from Leipzig. This change he does not regard as wholly auspicious. The majority of scientific men in the main still earn their salaries by teaching, 358.5 of 591 holding such positions; ninety-five are connected with research institutions; sixty-two in industrial work, and 74.5 are employed by the government. The percentage of this group who hold academic positions is considerably smaller than the percentage in the list of 1910, being 60.7 and 73.8, respectively. The book shows the ten strongest departments in each science and their gain or loss since 1906. Harvard shows its leadership, he says, not only as a whole but in nearly every department, standing first among universities in physics, chemistry, geology, botany, zoology, physiology, pathology, second in mathematics, third in astronomy and psychology and fourth in anthropology. Chicago stands first in mathematics and second in zoology. Columbia, which is first in psychology, does not rank higher than fifth in any other science. The U. S. Bureau of Standards leads in physics, and the Bureau of Ethnology in anthropology. The Carnegie Institution leads in astronomy, the U. S. Geological Survey in geology, the U. S. Department of Agriculture in botany, and the Rockefeller Institute in pathology.

Government Services

Veterans' Bureau Personals

The February issue of the *U. S. Veterans' Bureau Medical Bulletin* notes the following changes in personnel:

HOSPITALS

Dr. John B. Anderson, transferred from Knoxville, Iowa, to Maywood, Ill.
Dr. Lewellys F. Barker, reappointed at Washington, D. C., on part time.
Dr. John O. Boals, transferred from Sunmount, N. Y., to Newark, N. J., regional office.
Dr. Roy H. Bryant, transferred from Oteen, N. C., to Washington, D. C.
Dr. Wilfred E. Chambers, transferred from Excelsior Springs, Mo., to Kansas City, Mo.
Dr. Herbert M. Chaney, transferred from Cincinnati regional office to central office.
Dr. Samuel G. Fisher, Jr., transferred from Jefferson Barracks, Mo., to Palo Alto, Calif.
Dr. Robin W. C. Francis, resigned at Maywood, Ill.
Dr. Harold Freed, transferred from Dwight, Ill., to Jefferson Barracks, Missouri.
Dr. Herbert H. Gallatin, transferred from Jefferson Barracks, Missouri, to Legion, Texas.
Dr. Lemuel J. Godbey, transferred from Louisville, Ky., regional office to Tacoma, Wash.
Dr. John J. Harrington, resigned at Camp Custer, Michigan.
Dr. Hugh B. Henry, transferred from Memphis, Tenn., to Aspinwall, Pa.
Dr. Myron O. Henry, resigned at Fort Snelling, Minnesota.
Dr. Ottis Like, resigned at Palo Alto, Calif.
Dr. Arthur M. Master, appointed at Bronx, N. Y.
Dr. Marshall L. McClung, transferred from Legion, Texas, to Oteen, N. C.
Dr. John H. Prill, appointed at Dwight, Ill.
Dr. Walter Rapaport, resigned at Maywood, Ill.
Dr. Morris M. Reichard, transferred from Newark, N. J., regional office to Sunmount, N. Y.
Dr. Edwin J. Rose, transferred from Kansas City, Mo., to Muskogee, Okla.
Dr. Thomas Hugh Scott, transferred from Muskogee, Okla., to Maywood, Ill.
Dr. William S. Titus, resigned at Boise, Idaho.
Dr. Walter H. Ude, appointed at Minneapolis.
Dr. Ford C. Walsh, transferred from Detroit regional office to Jefferson Barracks, Missouri.
Dr. John B. Webb, transferred from San Antonio, Texas, to central office.
Dr. William W. Winters, transferred from Nashville, Tenn., to Fort Snelling, Minnesota.

REGIONAL OFFICES

Dr. Charles S. Adams, resigned at Phoenix, Ariz.
Dr. Gustaf W. Dahlquist, resigned at Fargo, N. D.
Dr. Earl J. Eversole, resigned at Louisville, Ky.
Dr. Roy W. Fouts, appointed at Omaha.
Dr. Benjamin J. Lewis, transferred from Wichita, Kan., to Helena, Mont.
Dr. Michael J. Shealey, transferred from Louisville, Ky., to Nashville, Tenn.
Dr. Howard L. Wheeler, appointed at Baltimore.

Graduating Class at Army Medical School

Thirty junior medical officers were graduated from the army medical school at Washington, D. C., February 1. The entire class will now be sent to Carlisle Barracks, Pennsylvania, for special instruction in field service and tactics until June, when they will be assigned to various stations. The chief of staff of the army, Major Gen. Charles P. Summerall, gave the graduation address. The graduates are:

Capt. Charles R. Glenn, Home Gardens, Calif.
Lieut. Dean M. Walker, Willows, Calif.
Lieut. Rupert W. Lundgren, Colorado Springs.
Lieut. Stanton K. Livingston, Washington, D. C.
Lieut. Horace P. Marvin, Washington, D. C.
Lieut. Huston J. Banton, Mount Zion, Ill.
Capt. Don Longfellow, Martinsville, Ind.
Lieut. Henry B. Lavery, Dubuque, Iowa.
Lieut. Thomas B. Murphy, Peterson, Iowa.
Capt. James R. McDowell, Silver Springs, Md.
Lieut. Robert F. Bradish, Washington, D. C.
Lieut. Harvey C. Maxwell, South Minneapolis.
Lieut. Claude G. Drace, Kennett, Mo.
Lieut. William B. Wilson, Cape Girardeau, Mo.
Lieut. John P. Bachman, Buffalo.
Lieut. John B. Chester, Montreat, N. C.
Lieut. James O. Gillespie, Forest River, N. D.
Lieut. William F. Burdick, Uniondale, Pa.
Lieut. Carlton D. Goodiel, Harrisburg, Pa.
Capt. Claude C. Langley, Travellers Rest, S. C.
Lieut. Thomas F. Bridges, Springfield, Tenn.
Lieut. James P. Gill, Jr., Dallas, Texas.
Capt. Ebner H. Inmon, Lubbock, Texas.
Lieut. George B. Moore, Jr., San Antonio, Texas.
Lieut. William H. Seale, Dallas, Texas.
Lieut. William L. Wilson, Dallas, Texas.
Capt. Francis C. Tyng, Salt Lake City.
Lieut. Jacob C. Harshbarger, Port Republic, Va.
Lieut. Marion W. Ransone, Hampton, Va.
Lieut. August W. Spittler, Fountain City, Wis.

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Foreign Letters

LONDON

(From Our Regular Correspondent)

March 3, 1923.

Death of Sir Dawson Williams

Only a month after his resignation of the editorship of the *British Medical Journal* (THE JOURNAL, January 21, p. 216) Sir Dawson Williams, to the great regret of his many friends in the profession, died suddenly, February 27, aged 74, from heart failure at his country home, to which he had retired. For some time his health had been indifferent but it was hoped that the cessation of his strenuous editorial work would enable him to recover strength and enjoy a well earned leisure. He was born in 1854, the eldest son of a clergyman, and was educated at University College, London, and at University College Hospital. He graduated M.B., B.S. at the London University, taking the gold medal in medicine. In 1885 he became M.R.C.P. and in 1895 was elected F.R.C.P. In the former year he was appointed assistant physician to the East London Hospital for Children and then he specialized in pediatrics, to which he made important contributions. In 1898 he published a successful manual, "The Medical Diseases of Infancy and Childhood." To Allbutt and Rolleston's great "System of Medicine" he contributed the articles on measles, German measles, coryza and glandular fever. A successful career as a specialist seemed in front of him, but he had worked on the editorial staff of the *British Medical Journal* for some time and he finally elected for journalism. In 1895 he was appointed assistant editor and in 1898, on the death of Mr. Ernest Hart, editor. To his long and distinguished services tribute has been paid in the previous letter. With an extensive knowledge of medicine (he has been described as "almost omniscient") he combined scholarship and literary power of no mean order. The latter are well shown in the last contribution from his pen, "The Oxford English Dictionary" (*Brit. M. J.* **1**:311 [Feb. 25] 1928). Perhaps the greatest of the many compliments paid to him is that while ever open to new ideas, he always saw medicine as a whole. His judgment is illustrated by the fact that he was the first to recognize the value of Mackenzie's work on the heart when that pioneer was only a general practitioner in a comparatively small town. On his resignation of the editorship, steps were taken to promote a testimonial to his valuable services in which all that is eminent in the profession, as well as the rank and file, would certainly have joined. It is one of the ironies of fate that the foundation of a fund for this purpose is described in one issue of the journal he so long and faithfully served, and his death is announced in the next issue.

Is British Stock Deteriorating?

The Galton lecture to the Eugenics Society was delivered by Mr. C. J. Bond, F.R.C.S., who took for his subject "The Distribution of Natural Capacity in the Population and the Need for National Stock Taking." He said that under our modern conditions of civilization there was a marked and growing tendency for the lowest social groups, those which included the mental defectives and individuals of low mental grade, the habitual pauper, and the innately criminal classes, to contribute an undue proportion to the numbers of the population. The burden of the support of these degenerate groups was largely borne by the more capable citizens above, who were thus handicapped in rearing their own offspring. If, in addition, interbreeding with inferior stocks also took place, the injury was double. From a study of numerous inquiries and official and unofficial reports, he concluded that there was some deterioration of bodily and mental qualities in certain sections of our population, and that an urgent need existed for national stock taking. The birth rate was lowest in the upper levels of society and in the professional and salaried groups in the large middle section of the population, and it rose on descending to the ranks of unskilled labor. This alteration in the previous normal incidence of fertility had increased rapidly in recent years. He advocated spread of the knowledge of birth control to all sections of the population, but with it instruction in the duty of adequate parentage of sound stock and healthy constitution. Only by education along biologic lines could a sound public opinion be formed concerning eugenic problems and a racial conscience aroused. Segregation along biologic lines must be brought about between the fit and the degenerate sections of society. In some cases, after careful inquiry, expert advice and judicial sanction, sterilization might be necessary.

While one must generally agree with the lecturer's statements and advice, it must be made clear that there is no proof that any deterioration of British stock has taken place. It may be freely admitted that the large body of socialistic legislation of recent years has a dysgenic effect by penalizing the middle classes, who are the ablest and most worthy section of the community, with the object of improving the condition of those lower in the social scale. A large part of the middle classes cannot afford to bring up families and educate children according to their standard or can do so only for a limited number, though they are taxed for the education and even the feeding of children of the classes below. But many other causes are in play in our racial evolution and the eugenic may outweigh the dysgenic. For one thing, the higher birth rate of the lower classes is to some extent counteracted by a higher death rate.

A Heroic Deed of the War

The sudden death at Cannes of Miss K. M. G. Davies, youngest daughter of Sir R. H. Davies, at one time lieutenant-governor of the Punjab, recalls a heroic deed of the war. In 1915 she was working as a bacteriologist at the American Hospital, Neuilly, Paris, under Dr. Taylor of the Imperial Cancer Research. Dr. Taylor was investigating the cause and treatment of gas gangrene. He was experimenting with guinea-pigs, but could not obtain results which would allow him to apply his conclusions to man. The crucial experience of inoculating a human being with a pure culture of the bacillus was necessary, and this of course appeared to be impossible. Miss Davies, who had studied bacteriology at the Pasteur Institute, had seen 209 fatal cases of gas gangrene and had seen guinea-pigs die and also recover under Dr. Taylor's experiments. Without revealing her intentions she took a room near the hospital and one day Dr. Taylor received a note from her asking him to come at once and make "last experiments." He found that she had given herself two deep injections of the culture of the bacillus in the muscles of the thigh and thus furnished him with a case of pure gas gangrene. He promptly injected the remedy with which he had been working —quinine hydrochloride. She was removed to the American Hospital and in twenty-four hours was pronounced out of danger. By her extraordinary self sacrifice in taking the risk of a painful and lingering death (for no amputation would have been possible) she proved the efficacy of the treatment and thus saved thousands of lives. The treatment was subsequently used at the American Ambulance, but the modesty of Miss Davies prevented any honor from accruing to herself. She desired that the treatment should be preventive and wrote a monograph showing that if the government cloth issued for military uniforms was treated with quinine hydrochloride the infection of gas gangrene might be prevented.

Splenomedullary Leukemia in a Roentgen-Ray Worker

At the Liverpool Medical Institution, Dr. Howel Evans reported the case of a roentgen-ray worker, now aged 46. In 1914 he joined the army and served as an assistant in various military hospitals until 1925. For the greater part of the time he was in charge of roentgen-ray apparatus and performed routine roentgenologic examinations. In 1924, substernal pain and dyspnea began, ten years after he first exposed himself to the rays. In 1925, splenomegaly and blood changes were observed, a few weeks after he ceased roentgen-ray work. After temporary improvement under a course of roentgen-ray treatment he relapsed and was now moribund. This is the ninth case of leukemia reported in roentgen-ray and radium workers against an equal number of cases of aplastic anemia. Of the nine cases of leukemia, five were lymphatic, three splenomedullary and in one the type is not recorded. Seven of the nine occurred in roentgen-ray workers and two in radium workers.

The Lowest Birth Rate on Record

Once again the lowest birth rate on record is announced. The births for the fourth quarter of 1927 numbered 152,754, being 11,255 less than in the preceding quarter and 11,643 below the number for the corresponding quarter of 1926. The birth rate was 15.4 per thousand of population. This rate is 1.3 per thousand below the corresponding quarter of 1926 and is the lowest recorded in any quarter. The death rate was 11.7 per thousand and 0.4 below the corresponding quarter of last year. Influenza was responsible for 1.65 per cent of the total deaths. Smallpox caused six deaths in the quarter. The infant mortality was 68 per thousand births, which was 14 per thousand below the average of the ten preceding fourth quarters and the lowest recorded in any fourth quarter. The natural increase of population (excess of births over deaths) of England and Wales for the quarter was 36,759, as against 62,292, 40,090 and 45,718 in the fourth quarters of 1924, 1925 and 1926, respectively. For the year 1927 the natural increase of population was 170,333, the average increase in the preceding five years being 268,378. For the year 1927 the birth rate was also the lowest on record, 16.7 per thousand. The infant mortality was 69 per thousand births, which was 1 below that of the previous year and equal to that of 1923, the lowest then on record.

PARIS

(From Our Regular Correspondent)

Feb. 22, 1928.

The Prevention and the Abortive Treatment of Influenza

Before the Academy of Medicine, Dr. Raoul Blondel presented recently a communication on the prevention and the abortive treatment of influenza. Influenza is disseminated by droplets of saliva and nasal mucus. The germ lodges most commonly on the ocular conjunctiva or reaches there eventually through rubbing of the eyes. From there, it reaches by the lacrimal route the nasal fossae, the rhinopharynx and the respiratory passages. This mode of contagion, according to Blondel, is characteristic of many other diseases, such as measles, scarlet fever, and possibly cerebrospinal meningitis.

A Dangerous Theft

Thieves recently broke into an outbuilding of the physiologic laboratory of the Faculté de médecine, and took possession of three ducks and a dozen rabbits, experimental animals that Professor Richet had inoculated with dangerous infectious diseases. The professor immediately notified the police, and the news spread rapidly, with the result that the merchants of the neighborhood found it impossible to dispose of their stock of ducks and rabbits. A protest was filed by the merchants, demanding that the laboratory of Professor Richet be closed as a menace to public health. In truth, the laboratory, which is well isolated, is dangerous only for thieves and for merchants who buy their booty. The decision of the police department as to whether the needs of the merchants or those of science are more deserving of protection is awaited with interest.

Medical Secrecy and Social Insurance

The question of professional secrecy as applied to medicine continues to interest medical circles. At the Academy of Medicine, Professor Balthazard continues his campaign. It is the general opinion that the proposed law pertaining to social insurance will make professional secrecy a dead letter, and that this fact will cause many patients to decline to take advantage of the law. Professor Weiss, dean of the Faculty of Medicine of Strasbourg, is thoroughly familiar with the effects of the law, for it is already in operation in Alsace and Lorraine, where it has remained in force since it was introduced by German legislation. In an interview, he cites some typical examples. According to a report of a health officer, he found that, during 1925 and 1926 (Oct. 1, 1925, to Nov. 30, 1926), 1,672 patients were summoned for examination, 979 of whom, or 58.55 per cent, failed to appear, and consequently lost their right to treatment. In 1924-1925, 1,969 were summoned for examination, 1,227 of whom, or 62.31 per cent, defaulted, either because they were not actually ill, or because they disliked to tell a stranger who had the confidence of the *krankenkasse* but whom they did not feel they could trust that they had had syphilis or some other venereal disease. It is evident, therefore, that a large percentage of the insured prefer to renounce the treatment to which they are entitled by law and for which they have paid their dues in advance, rather than run the risk of having the secret of their disease divulged.

The Use of Chicory in the Army

The use of roasted chicory root powder dates from the napoleonic epoch of the continental blockade, during which American products could not enter France, and, more particularly, coffee. After the blockade was raised and coffee could again be freely imported, the use of chicory continued as an admixture of genuine coffee, sometimes in the spirit of economy and occasionally because the taste of the mixture came to be preferred to that of pure coffee. In the regions of northern France, only the mixture of coffee and chicory is used, which is very fortunate; for the laboring class (more particularly, the miners) uses coffee to excess. Chicory is not without virtues of its own. It stimulates the appetite and the digestive processes, and prevents constipation, but does not cause nervous or cutaneous disorders. At the suggestion of Deputy Salmon, the minister of war has decided to supply a large amount of chicory to the army, which is a large consumer of coffee—at first, as an admixture of coffee. In addition to the considerable saving that will result for the budget, it is thought that the health of the soldiers will also be improved and that they will acquire good habits that they will keep when they get home.

Two Prizes for Researches on Infectious Scleroses of the Spinal Cord

Professor Sicard has received offers of prizes from two generous anonymous donors, one a Roumanian and the other a prominent industrialist of France. The amount of each of the prizes is 100,000 francs, and they are offered for researches on the infectious nature and the treatment of amyotrophic lateral sclerosis and multiple sclerosis. M. Sicard is appointed the sole judge of the papers handed in, which is an interesting departure from the usual method. He assumes, thus, openly all responsibility, which is perhaps more definite than to leave the decision to a committee composed of several members.

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NETHERLANDS

(From Our Regular Correspondent)

Jan. 16, 1928.

Child Labor

The report on the inspection of labor for the year 1926 appeared recently. The law prohibits the employment of children under 14 years of age. This law has given rise to difficulties, especially since the seventh grade in the primary school was abolished. Owing to the fact that they no longer attend school, a large proportion of the children 13 years of age have ceased to have their time employed. The number of violations of the provision concerning child labor reached in 1926 nearly a thousand. The supervision of boats presents the greatest difficulties.

Smallpox Vaccination

The question of smallpox vaccination continues to awaken controversy. Reference has been made to the refusal of certain groups to accept obligatory vaccination, and the support given them by the alleged observation of cases of encephalitis resulting from vaccination. The discussions have found an echo in the daily press, and even parliament took up the problem, with the result that administrative measures were introduced providing for the exclusive distribution of sterile vaccine, a form of neurovaccine similar to that used in Spain. Some of the lay journals, such as the *Nieuwe Rotterdamsche Courant*, published articles to the effect that only vaccines obtained without passage through rabbits should be employed, alleging that vaccines developed in rabbits were responsible for the encephalitic infection. On the other hand, it has been pointed out that cases comparable to those observed today were described as far back as 1903, whereas rabbits were first employed in 1912 in the preparation of vaccines. Another interesting document has just been republished, the inquiry made in 1902 into all the untoward incidents or accidents due to vaccination. At that time a questionnaire was sent to all the physicians of the kingdom asking them to report all accidents that had arisen in connection with vaccination. This inquiry yielded 90 per cent of responses, or a total of 2,057. Only sixty-seven physicians reported accidents, which consisted of local infections, septicemias, syphilis, and two cases of meningitis. These two cases were eliminated from the statistics, as it was a question of tuberculous meningitis. The inquiry covered a period of twenty years, during which about 2½ million vaccinations had been given. The number of accidents included six deaths, or one in 416,666 cases. The commission authorized to conduct the inquiry reached the conclusion that the dangers from vaccination are almost nil. At that time no cases of postvaccinal encephalitis were noted.

The measures adopted at present appear to many practitioners to be useless, and they demand (as, for example, Gorter and Van Nederveen in a recent article in the *Nederlandsche Tijdschrift voor Geneeskunde*) a return to the use of the dermovaccine of moderate virulence, which causes only a slight eruption and which has neurotropic properties that are not pronounced.

However, during the period in which only sterile neurovaccine has been distributed for vaccination purposes, which dates from the beginning of last August, nothing eventful has happened. The minister of labor has suspended for a period of three years the indirectly coercive measures with regard to vaccination, notably the requirement that a certificate of vaccination be furnished by school children on admission to school. Nevertheless, the minister reserved the right, in case of an epidemic of smallpox, of prohibiting both pupils and teachers from being admitted to schools unless they could present a certificate of vaccination.

Medicine and the Public Press

A large daily, *De Telegraaf*, published recently a series of articles on physicians and the medical profession, their rôle, and their social position in the community. The educational rôle of the physician was set forth in brilliant fashion by Professor Casimir. The present plethora of students of medicine, and the overcrowding of the medical profession, were the subjects of several studies. On the other hand, an account of the developments in the colonies and the future of medicine in the Dutch East Indies sought to stimulate colonial appointments. From the social point of view, mention must be made of the articles by Pinkhof on the right of privileged communication and the right of advertising. Articles on charlatanism, on mutual protective associations against sickness, and on social hygiene, completed the series.

VIENNA

(From Our Regular Correspondent)

Feb. 1, 1928.

The Prognosis and Frequency of Syphilitic Affection of the Aorta

According to a paper by Prof. H. Schlesinger, read at the last meeting of the Gesellschaft der Aerzte in Vienna, the percentage of the population affected with syphilis is much greater than is commonly supposed. Necropsy reports indicate a low incidence; for instance, in Germany, in a large number of necropsies, only from 2.5 to 5.5 per cent gave definite evidence of changes due to syphilis. Clinical researches, however, have yielded 10 per cent—or even 15 per cent when the patients belonged to the older age groups. The estimates of dermatologists are still higher. Schlesinger found among his patients more than 14 per cent affected with syphilis, the percentage being higher among the men than among the women. Associated with the "migration" of syphilis from the skin, there has been a significant increase of neurosyphilis and mesaortitis, and it is held that this is due to the fact that in recent years antisyphilitic treatment has been intensified. Observations of the past twenty years show a rapid increase of aortitis; it is now recognized as the most frequent manifestation of syphilis of the viscera. However, the aortitis is frequently not recognized when it is combined with atheroma. The prognosis is not necessarily unfavorable, as there are often benign types, especially in old age and in neurosyphilis, in association with which it may remain untreated for many years. But it is always a dangerous condition. A group of pathologists recommend intensive specific treatment, whereas dermatologists and neurologists rather favor a mild course. In the discussion that followed the address, it became evident that the majority of the investigators prefer a mild initial and, later on, a not very intensive treatment—not to exceed from 3.5 to 4.5 Gm. of arsphenamine, to effect a latency of the vascular process. Some of those taking part in the discussion emphasized that the increase of aortitis is only apparent, being due to the fact that the diagnosis is now more easily made than twenty years ago.

The Relations Between Housing Conditions and Tuberculosis

At the last meeting of the Landeszentrale zur Bekämpfung der Tuberculose, Chief Physician Dr. Götzl discussed the frequency of tuberculosis in Vienna and the methods of combating the disease in the fiscal year 1926-1927. There was a slight increase in the incidence (due merely to the natural fluctuations in the mortality), which affected almost exclusively the male sex and the age groups above 20. In females, a decrease in tuberculosis mortality was noted. The figures bearing on the housing conditions among the patients are important. Of 1,981 patients with infectious tuberculosis,

314 occupied only a single room, and in 118 of these cases there were three or more occupants of the room. There were 973 patients who lived in two-room dwellings or apartments, 458 of which were occupied by more than four persons. There were 551 patients who lived in three-room apartments, 215 of which were occupied by more than five persons. In 28 per cent of the cases investigated, the infectious patient was obliged to share his bed with other persons. The municipality of Vienna has been able, in spite of financial difficulties, to erect more than 50,000 sanitary, airy, sunny apartments, which, to be sure, are not large, from the standpoint of floor space (between 45 and 85 cubic meters per apartment), but yet furnish sufficient air and light to meet all hygienic requirements. These apartments are placed at the disposal, chiefly, of the underprivileged classes, and, in this manner, about 10 per cent of the inhabitants of Vienna are aided. The ordinance requiring notification of cases of tuberculosis is of little benefit. Only 1 per cent were brought to the knowledge of institutions through notifications made by the authorities.

The Geochemistry and Biochemistry of Iodine in Relation to Goiter

The Norwegian scientist Professor Lunde, of Oslo, delivered recently before the Gesellschaft der Aerzte in Vienna an address on the geochemistry and biochemistry of iodine with reference to the prophylaxis of goiter. Lunde bases his contentions on the new theory of the formation of the terrestrial sphere, and postulates an atmospheric layer, an outer shell of silicate (the ground on which we stand and walk), then a layer of sulphite, and a central core of iron. The presence of iodine has been demonstrated with absolute certainty in the first three layers, though the quantities may be minimal in some. Its presence in the central core is also probable. Through the weathering of the rocks, iodine reaches the biosphere, or the sphere of living organisms, in which it circulates rapidly. In Norway at present, goiter prophylaxis is carried out in this manner: In goitrous regions, sea fish are offered for sale by the health authorities in large quantities at cheap prices. This is similar to the custom in vogue in Switzerland and in Austria of placing iodized table salt at the disposal of the population of goiter regions. Professor Lunde and also Professor Wagner-Jauregg recommend that the population of goitrous sections be induced to eat sea fish.

The Value of Suggestion as a Mode of Treatment in Childhood

Professor Hamburger gave recently an address on the practical value of suggestion in the treatment of children. He emphasized that even before the completion of the second year of life purely psychogenic disorders and abnormalities partly psychogenic and partly of organic origin have been observed. Such conditions can be most easily treated by suggestive methods, which can be carried out under the most simple circumstances. The suggestive treatment must, however, be supplemented by physical or medicinal treatment —for example, massage, hydrotherapy or electricity (faradic or high frequency current), and every practitioner should have such apparatus and know how to use it. But since, not only in purely psychogenic disorders but sometimes also in abnormalities that are partly psychogenic and partly of organic origin, the autonomic nervous system is involved, atropine and other derivatives of belladonna will give good results. Probably, in such cases, the medicament and the suggestive treatment strengthen one another. The disorders to be dealt with under this head are: anorexia, habitual vomiting, constipation, incontinence, pollakiuria, enuresis nocturna, masturbation, cephalalgia, heart manifestations of various kinds, and especially the aggravated chronic or habitual cough when it lasts more than six weeks; chorea of more than two or three months' standing, and also recurrences of chorea. Many cases of stuttering and many tics are likewise amenable to suggestive treatment. Also pavor nocturnus, night cough and other similar disturbances of sleep can be made to disappear under suggestive treatment. Many cases of supposedly genuine epilepsy are recognized through suggestive treatment wisely applied to be purely functional. The great practical value of this mode of treatment lies in: 1. The therapeutic results. 2. The diagnostic aid in cases in which it is uncertain whether or not there is an organic disease; the therapeutic success is then at the same time a diagnostic proof—for instance, when, after a persistent cough has cleared up, tuberculosis can be excluded, or a brain tumor after elimination of violent headaches, or appendicitis as soon as the abdominal pains have been banished, or epilepsy when the attacks have been controlled by means of suggestion. 3. The ease with which suggestive treatment can be carried out by any physician under the simplest conditions.

BERLIN

(From Our Regular Correspondent)

Feb. 25, 1928.

Objections to the Use of Amalgam for Filling Teeth

As mentioned in a previous letter, Professor Stock, chemist, of Berlin, published, some time ago, his observations on the dangers of amalgam for the filling of teeth—observations that he had made both on himself and on other persons. Although his statements were designated by various medical authorities as at least exaggerated, Professor His, in view of the great esteem in which Professor Stock is held in the scientific world, decided to establish a center in his medical clinic in Berlin where observations could be made on persons who present disease manifestations due apparently to amalgam fillings. Professor Fleischmann, who was in charge of these researches, recently reported before the Verein für innere Medizin on the results. The investigation material consisted, first, of workmen whose occupation brought them in frequent contact with mercury, and, secondly, of persons who have mercury-containing fillings in their teeth. The method employed by Stock and Heller made possible the demonstration of minimal quantities of mercury. It was shown that certain persons are "mercury carriers," even though there is not the slightest evidence of mercurial poisoning. Hence, the demonstration of the presence of mercury is not necessarily equivalent to the diagnosis "mercurial poisoning." With difficulty, fifty-one persons were found who had had no contact with mercury other than with that which had been used in their teeth. Of these fifty-one subjects, thirty-seven had copper-amalgam fillings. In thirty of these thirty-seven subjects, or 81 per cent, the presence of mercury in the mouth, outside the fillings, was demonstrated, whereas in the fourteen subjects with pure amalgam fillings there was only one in whom mercury could be so demonstrated. Even a large number of pure amalgam fillings (some subjects had as high as thirteen, or even fifteen, fillings) could be present without delivery of mercury. In eight, with poisoning due to copper-amalgam fillings, the symptoms disappeared after removal of the fillings; likewise, the eliminations of mercury ceased. Furthermore, thirty-seven school dentists and twenty-four school dental nurses were examined by Professor Fleischmann, and in nearly all there were manifestations of fatigue, a tendency to headache, and the like, while in two persons distinct symptoms of mercurial poisoning were observed. This proves that dental work that involves the application of amalgam fillings constitutes a danger. Professor Fleischmann gives as the result of his investigations that metallic mercury, in a larger number of cases than has commonly been assumed, may produce mani-

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festations which, while they may not imperil the life of the subject, may impair his health and reduce his capacity for work. As the source of such mercurial injuries must be considered the mercury that is inhaled in connection with the duties of various occupations and that which is absorbed from copper-amalgam fillings. The causation of mercurial injuries appears to be associated with a hypersensitiveness for the extent and scope of which there is as yet no standard of measurement. In practice, it behooves all industrial and professional circles that use mercury to exercise increased caution.

Professor Stock takes the position that not only the copper-amalgam but also the pure amalgam fillings constitute a source of danger, as he contends that it is not hypersensitiveness to mercury that is exceptional but rather nonsusceptibility. He reported several cases in which mercurial poisoning as the result of the use of pure amalgams had been observed. Another serious aspect of the problem, as was pointed out also by Professor Zangger of Zurich and by Dr. Haber, is that the pure amalgams vary greatly in quality. Professor Stock demanded therefore the interdiction of copper amalgams (which seems at present not at all unlikely) and the liquidation of amalgams of all kinds, by the dental profession. He opposed the general tendency to conceal the dangers from the public, and was of the opinion that the public should be informed that also pure amalgams are not without danger. In the presence of certain manifestations it is quite possible that silver or gold amalgams may be the cause.

The Blood Test for the Determination of Fatherhood

Up until recently there had been no method for which any high degree of certainty could be claimed for the establishment of fatherhood. This fact gave rise naturally to many judicial difficulties. The penal code had to state, therefore, in precise terms under what conditions fatherhood may be assumed to exist. In spite of the cited presuppositions, the code does not recognize direct descent in cases in which it "is evidently impossible in the nature of the circumstances." But the number of cases in which direct descent is evidently impossible are extremely few. Of late, however, endeavors have been made to extend their range through the application of the blood test. The blood test has been admitted by many courts as constituting adequate proof. The court of chambers (*kammergericht*), the highest court of Prussia, refuses to accept the blood test as evidence that a given person is not descended from a given person. In the case in which the *kammergericht* was compelled to render a decision, the question at issue was whether or not the defendant was the illegitimate father of the plantiff. The plaintiff sought to prove by the blood test that a witness in the case with whom the plaintiff's mother had had relations could not be the plaintiff's father. The court of chambers held that the results of medical reseach to date with regard to the demonstration of an evident impossibility of direct descent were not such as to meet the strict requirements of the law. The scientific conclusions based on the blood test are founded only on hypotheses, which, to be sure, could claim a high degree of probability, but did not fulfil the precise demands of the law. In support of this view the court cited the circumstance that in 1926, in a series of 2,000 children examined, one child was found the outcome of whose examination proved that the blood test is not absolutely reliable, and stated that therefore he refused to accept such test as furnishing adequate proof. As long as there is a possibility that even a single child, for some undiscovered reasons, is not subject to the mechanism of the test, it cannot be judicially held that it is impossible for a child to be descended immediately from a person belonging to a different blood group. The court called further attention to the fact that, on account of the uncertainty in the classification of blood groups, eminent physicians had expressed their views and had advised the exercise of the greatest caution in the judgment of the results.

At a session of the Berliner Forensisch-Medizinische Vereinigung, the opposite conclusions were reached. Schiff, director of the bacteriologic laboratory of the Friedrichshain Hospital, sought to refute the objections raised to the reliability of the blood test. At the Naturforscher-Versammlung held in Düsseldorf last year, twenty eminent scientists and medicolegal experts expressed themselves favorably in regard to the practical application in judicial cases of the blood test for fatherhood, and Schiff himself, who at first was inclined to observe great caution in the practical application of the test, has found his confidence in it steadily increasing. In Germany and Austria, the lower courts, especially in suits for maintenance, have recognized in about a thousand cases the value of evidence based on the results of the blood test for fatherhood. The ministry of justice in Württemberg and also in Bavaria have recommended the application of the blood test. The *kammergericht*, however, supported itself in its adverse judgment on important medical opinions, which endorsed the view that the results of the blood test furnished only evidence of a high degree of probability. The important opinions in question were rendered by Professors Abderhalden and Nürnberger in Halle. In letters to Schiff, both men have declared that the sentences cited in the court decision were to be taken differently, and that when these statements were made the more recent favorable results of research were not yet known. Professor Nürnberger stated further that the blood test presented the same degree of certainty as the signs evidencing the degree of maturity of the new-born. If the *kammergericht* regards the series of examinations of 2,000 children as too small a number from which to draw conclusions as to the reliability of the test, Prof. Dr. Bernstein, mathematician and statistician in Göttingen, entertains other views, as was shown by an official decision that Schiff read aloud. By a number of examples taken from judicial practice, Schiff illustrated the value of the blood test, which presents the same degree of certainty as the Uhlenhuth test, on which the differentiation of animal and human blood is based. Schiff thinks that this is not the last decision that the *kammergericht* will render.

In the discussion that followed the presentation of the address, Strassmann and Leppmann, medicolegal experts, expressed the view that the blood test for fatherhood is just as reliable as other medicolegal methods.

An article by Schiff on the practical value of the results of the investigation of blood groups will be found in number 2 of the *Deutsche medizinische Wochenschrift*.

A Remarkable Year

A large number of eminent German physicians this year are rounding out their three score and ten. In addition to Professor Minkowski, who, as already announced, celebrated his seventieth birthday in January, the following are to be mentioned: the ophthalmologist Professor Silex of Berlin, who reaches the goal in March; the hygienist Pfeiffer of Breslau (likewise in March), and Professor Boas of Berlin, the well known specialist in gastro-intestinal diseases and the diseases of metabolism; the otologist Professor Körner of Rostock (May); internist Professor Kraus of Berlin (May); Professor Goldscheider of Berlin, the pediatrician Professor von Starck of Kiel, Prof. F. Strassmann (legal medicine) of Berlin, and Anton, neurologist and psychiatrist, of Halle (all four in August); Professor von Noorden, Frankfort-on-the-Main; Professor Friedrich Müller, and the hygienist Prof. K. B. Lehmann, Würzburg (all three in September), and Professor Rieder of Munich (December). A great many American physicians have had courses under these men.

Marriages

FRANCIS JOSEPH PETRONE, Greenwich, Conn., to DR. OTHILIA PATRICIA VIEIRA of New Bedford, Mass., February 21.

WILLIAM H. BAUGHMAN, Oakland, Calif., to Miss Dorothy Kent of Mount Vernon, N. Y., January 23.

CHARLES N. DEAN, Sumner, Ill., to DR. JEANETTE F. THROCKMORTON of Derby, Iowa, March 1.

BRENT A. WELCH to Miss Edna Regula, both of Jackson Center, Ohio, January 26.

SAMUEL G. SLOAN to Miss Lucille Reed, both of Elmore, Ohio, recently.

Deaths

John Grosvenor Cross ✠ Minneapolis; Northwestern University Medical School, Chicago, 1895; past president of the Hennepin County Medical Society; at one time clinical professor of medicine, University of Minnesota Medical School, Minneapolis; aged 57; formerly on the staffs of the Minneapolis General Hospital, Hill Crest Hospital, St. Mary's Hospital, Northwestern Hospital and the Abbott Hospital, where he died, March 3, of cerebral hemorrhage.

Max Gustav Schlapp ✠ New York; University of Berlin, Germany, 1896; professor of neurology, New York Post-Graduate Medical School; formerly assistant professor of neuropathology, Cornell University Medical College; member of the American Psychiatric Association; aged 58; died, March 6, at the New York Post-Graduate Hospital, of pneumonia.

George Manning Ellis ✠ Chattanooga, Tenn.; University of Tennessee College of Medicine, Memphis, 1887; formerly professor of general and descriptive anatomy, Chattanooga Medical College; veteran of the Spanish-American and World wars; at one time part owner of the West-Ellis Hospital; aged 63; died, March 5, at Memphis, of nephritis and uremia.

Fred James Frater ✠ Shreveport, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1897; member of the Associated Anesthetists of the United States and Canada; served during the World War; on the staffs of the Schumpert Memorial Sanitarium and the Tri-State Sanitarium, where he died, March 4, of influenza, aged 57.

James A. Massie ✠ Santa Fe, N. M.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1892; veteran of the Spanish-American War; for twenty-one years member of the state board of medical examiners; physician in the Indian Service; aged 57; died suddenly, February 21, in a hospital at Pueblo, Colo., of angina pectoris.

Edwin Syme Moore ✠ Bayshore, N. Y.; Eclectic Medical Institute, Cincinnati, 1876; for thirty-five years county coroner; formerly county school commissioner; aged 75; died, March 1, at the Long Island College Hospital, Brooklyn, of pneumonia, following suprapubic cystotomy for stone in the bladder and hypertrophy of the prostate.

William F. Saner, Hope, Ark.; Louisville (Ky.) Medical College, 1888; member of the Arkansas Medical Society; past president of the Hempstead County Medical Society; at one time superintendent of the Hospital for Nervous Diseases, Little Rock; aged 62; died, February 28, in a hospital at Dallas, Texas, of arteriosclerosis.

Carl Henry Nielsen ✠ Monrovia, Liberia, West Africa; Chicago College of Medicine and Surgery, 1916; member of the Illinois State Medical Society; physician and surgeon to the American Lutheran Hospital; served during the World War; aged 40; died, January 29, of streptococcus sore throat and interstitial nephritis.

John C. Falk ✠ St. Louis; St. Louis Medical College, 1890; formerly instructor in materia medica at his alma mater, and assistant professor of therapeutics, materia medica and pharmacy, Missouri Medical College; at one time president of the St. Louis College of Pharmacy; aged 64; died, March 3, of lobar pneumonia.

Charles Noah Dean, Sumner, Ill.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1907; member of the Illinois State Medical Society; president of the board of education; aged 48; died, March 11, at the Methodist Hospital, Des Moines, of rupture of the pulmonary artery and arteriosclerosis.

Lucian Gex Locke, Portsmouth, Ohio; University of Michigan Medical School, Ann Arbor, 1896; member of the Ohio State Medical Association; formerly on the staffs of the Portsmouth General and the Schirrman hospitals; aged 61; died suddenly, March 5, of cerebral hemorrhage.

Edward Oscar Vollum, Albert Lea, Minn.; State University of Iowa College of Medicine, Iowa City, 1908; member of the Minnesota State Medical Association; formerly county health officer; on the staff of the City and County Hospital; aged 48; died, February 28, of cerebral hemorrhage.

Eugene Monaghan, New York; Medical Department of the University of the City of New York, 1894; member of the Medical Society of the State of New York; formerly on the staff of the Fordham Hospital; aged 74; died, March 4, at the Reconstruction Hospital, of pneumonia.

Charles Crosby Williams ✠ Los Angeles; Harvard University Medical School, Boston, 1886; member of the Massachusetts Medical Society; aged 72; died, January 18, at the California Lutheran Hospital, of acute dilatation of the heart and diverticulosis of the urinary bladder.

James E. Bramlett, Clarksdale, Miss.; Vanderbilt University School of Medicine, Nashville, 1887; member of the Mississippi State Medical Association; aged 73; died, February 25, of injuries received when the automobile in which he was driving was struck by a train.

Wilber Wilkins Farnell, New Smyrna, Fla.; University of Georgia Medical Department, Augusta, 1911; member of the Florida Medical Association; aged 38; died, February 22, at the Halifax Hospital, Daytona Beach, of a skull fracture received in an automobile accident.

Eugene Luther Jagar ✠ Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1905; associate professor of medicine and neurology at his alma mater; on the staff of the Roper Hospital; aged 48; died, February 20, of carcinoma of the stomach.

Charles Bernard Henkel, Annapolis, Md.; University of Maryland School of Medicine, Baltimore, 1889; member of the Medical and Chirurgical Faculty of Maryland; also a pharmacist; aged 57; died, February 28, at the Emergency Hospital, of acute nephritis.

Harriet Knudsen Burnet, East Orange, N. J.; New York Medical College and Hospital for Women, 1866; formerly on the staff of the Homeopathic Hospital of Essex County; aged 73; died, January 25, at Santa Barbara, Calif., of cerebral hemorrhage.

Henry Francis Farrell ✠ Meriden, Conn.; Yale University School of Medicine, New Haven, 1922; formerly on the staffs of the Fifth Avenue and St. Luke's hospitals, New York; aged 39; died, February 17, at his home in West Haven, of heart disease.

George Washington Whiteside, Sanatorium, Texas; University of Nashville (Tenn.) Medical Department, 1908; on the staff of the State Tuberculosis Sanatorium; aged 43; died, February 20, of injuries received in an automobile accident.

Wilfrid Lyons Gauthier, Virginia, Minn.; University of Montreal Faculty of Medicine, Montreal, Que., Canada, 1892; member of the Minnesota State Medical Association; aged 57; was found dead in his office, February 28, of heart disease.

Henry Franklin Glenn, Gastonia, N. C.; Atlanta College of Physicians and Surgeons, 1900; member of the Medical Society of the State of North Carolina; on the staff of the Gaston Sanatorium; aged 57; died, February 27, of pneumonia.

James Dean De Lamar ✠ Columbus, Ga.; University of Georgia Medical Department, Augusta, 1906; served during the World War; formerly on the staff of the City Hospital; aged 47; died suddenly, February 23, of heart disease.

Omer Willfer Clabaugh, Sedalia, Mo.; Bellevue Hospital Medical College, New York, 1893; member of the Missouri State Medical Association; served during the World War; aged 59; died, February 13, of coronary embolism.

Thomas Somerset Owen, La Plata, Md.; University of Maryland School of Medicine, Baltimore, 1892; formerly a druggist; for many years county health officer; aged 57; died, February 23, of cirrhosis of the liver.

James Quinn Lemmon, Latrobe, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1882; member of the Medical Society of the State of Pennsylvania; aged 75; died, January 20, of cerebral hemorrhage.

James Whann McSherry ✠ Martinsburg, W. Va.; University of Maryland School of Medicine, Baltimore, 1855; Civil

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War veteran; formerly mayor of Martinsburg; aged 94; died, February 28, of cerebral hemorrhage.

Jacob C. Batdorf, Grand Rapids, Mich.; Starling Medical College, Columbus, Ohio, 1864; Civil War veteran; aged 94; died, recently, at the home of his daughter in Berkeley, Calif., of heart disease, following pneumonia.

Felix Henry Compton, Birmingham, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1880; aged 71; died, March 2, at a local infirmary, as the result of a cerebral hemorrhage suffered two months ago.

James H. Jackson, Atascadero, Calif.; Bellevue Hospital Medical College, New York, 1876; formerly physician in charge of the Jackson Health Resort, Danville; aged 86; died, February 18, of heart disease.

Thomas Henderson ✠ Fort Towson, Okla.; Bellevue Hospital Medical College, New York, 1891; past president of the Choctaw County Medical Society; aged 56; died, February 25, at Paris, Texas, of heart disease.

William R. Hoard ✠ Sherman, Texas; University of Louisville (Ky.) School of Medicine, 1891; formerly on the staff of St. Vincent's Hospital; aged 58; died, suddenly, in February, of coronary occlusion.

George Peterson ✠ Washington, D. C.; George Washington University Medical School, 1904; served during the World War; aged 48; died, February 20, at the Garfield Memorial Hospital, of Hodgkin's disease.

Frank Joseph Partridge, Worcester, Mass.; University of Vermont College of Medicine, Burlington, 1888; aged 71; died, February 28, at the Worcester City Hospital, of bronchopneumonia and heart disease.

Herman Felix Nordeman, New York; Medical Department of Columbia College, New York, 1884; for twenty years on the visiting staff of the Bellevue Hospital; aged 66; died, February 19, of heart disease.

James Wilson Croft, West Liberty, Ohio; Starling Medical College, Columbus, 1901; member of the Ohio State Medical Association; served during the World War; aged 57; died, March 6, of thrombosis.

Elias Smith Wright, Salt Lake City; Medical Department of the University of the City of New York, 1891; aged 67; died, February 14, of cerebral arteriosclerosis, hypertension and chronic myocarditis.

Harold Elliott Shaver, Olean, N. Y.; University of Buffalo School of Medicine, 1915; member of the Medical Society of the State of New York; aged 35; died suddenly, February 19, of chronic myocarditis.

Charles Wesley Rodecker, Holcombe, Wis.; Bennett College of Eclectic Medicine and Surgery, 1872; Civil War veteran; aged 82; died in February, at a hospital in Chippewa Falls, of heart disease.

Robert C. Randolph ✠ Boyce, Va.; University College of Medicine, Richmond, 1894; past president of the Clark County Medical Society; aged 58; died, February 20, of embolism, following phlebitis.

John Lee Farmer, Russellville, Ky.; Vanderbilt University School of Medicine, Nashville, Tenn., 1894; served during the World War; aged 58; died, February 26, of carcinoma of the prostate.

John Haldeman Fretz, Trenton, N. J.; College of Physicians and Surgeons, Baltimore, 1885; member of the Medical Society of New Jersey; aged 69; died, March 4, of myocarditis and nephritis.

James M. Morgan, Toledo, Ohio.; Chicago Physio-Medical Institute, 1887; aged 68; died, March 4, at Pineville, Ky., while en route to Florida, of injuries received in an automobile accident.

George Herbert Guptill ✠ Raymond, N. H.; Medical School of Maine, Portland, 1888; formerly on the staff of the Elliott Hospital, Manchester; aged 63; died, Dec. 10, 1927, of myocarditis.

Howard Edwin Abbott, North Reading, Mass.; Medical School of Maine, Portland, 1884; member of the Massachusetts Medical Society; aged 69; died, February 14, of cerebral hemorrhage.

William Desmond Noonan, Bay City, Mich.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1927; aged 24; intern, Mercy Hospital, where he died recently, of diphtheria.

Edward Thomas Trustrum Marsh, Huntington, N. Y.; Bellevue Hospital Medical College, New York, 1866; Civil War veteran; aged 85; died, February 24, of cardiac embolus.

Albert Barnes Jardin, Philadelphia; Medico-Chirurgical College of Philadelphia, 1897; aged 60; died, February 18, at the Germantown Hospital, of chronic myocarditis and aortitis.

James Grady Harris ✠ Muskogee, Okla.; University of Tennessee College of Medicine, Memphis, 1916; served during the World War; aged 38; died, Dec. 31, 1927, of uremia.

Ernest M. Lyon, Newark, N. J.; Bellevue Hospital Medical College, New York, 1877; aged 76; was found dead in bed, February 23, at Jamaica, N. Y., of intestinal obstruction.

William Kinne ✠ Brooklyn; Bellevue Hospital Medical College, New York, 1891; on the staff of the Swedish Hospital; aged 62; died, March 2, of cerebral hemorrhage.

George Rossner, Gretna, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1895; aged 56; died recently, of bronchopneumonia, following influenza.

William Amos Gilroy, Washington, D. C.; Georgetown University School of Medicine, Washington, 1926; aged 27; was found dead in bed, February 29, of lobar pneumonia.

John Thomas Wiggins, Los Angeles; Missouri Medical College, St. Louis, 1885; aged 65; died, February 23, as the result of a cerebral hemorrhage suffered four months ago.

Edward Sutton Wilson, Buffalo; Trinity Medical College, Toronto, Ont., Canada, 1880; aged 85; died, February 24, of arteriosclerosis, myocarditis and chronic nephritis.

James Vernon Calhoun, San Francisco; Cooper Medical College, San Francisco, 1903; aged 47; died, February 26, at the San Francisco Hospital, of chronic nephritis.

John Mason Kash, Lexington, Ky.; Kentucky School of Medicine, Louisville, 1905; also a druggist; aged 46; was found dead, February 21, of a gunshot wound.

George Carson Taggart, Clearwater, Fla.; Baltimore University School of Medicine, 1898; formerly a druggist; aged 57; died, February 29, of arteriosclerosis.

Adele Kimball Graening, Waverly, Iowa; State University of Iowa College of Homeopathic Medicine, Iowa City, 1894; aged 66; died in February, of heart disease.

Arthus William Beatty ✠ Colver, Pa.; Jefferson Medical College of Philadelphia, 1906; aged 51; died, February 29, of chronic nephritis and heart disease.

Charles G. Bang, St. Louis; Missouri Medical College, 1883; aged 63; died, March 2, as the result of cerebral hemorrhage suffered some time ago.

William Jacob Little, Macon, Ga.; Southern Medical College, Atlanta, 1894; aged 56; died, February 26, at a local hospital, of caustic poison.

Joseph Austin Keeley, Detroit; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1911; aged 39; was drowned, February 3.

Richmond Kelly ✠ Portland, Ore.; Miami Medical College, Cincinnati, 1884; aged 72; died suddenly, February 22, of heart disease.

John Miller Paxson, Riverside, Calif. (licensed, Michigan, 1900); Civil War veteran; aged 85; died, February 23, of heart disease.

Euclid Marshall Duncan, Marshall, Ill.; Jefferson Medical College of Philadelphia, 1872; aged 78; died, February 26, of myocarditis.

Andrew Jackson Parks, Dallas, Texas; Baylor University College of Medicine, Dallas, 1902; aged 54; died, February 21, of pellagra.

Clarkson W. Houser, St. Paul; Louisville (Ky.) National Medical College, 1900; aged 74; died, recently, of bulbar paralysis.

Harvey Spears Kinard ✠ El Paso, Texas; Barnes Medical College, St. Louis, 1908; aged 50; died, January 20, of angina pectoris.

James C. Latham, Pittsburgh; Jefferson Medical College of Philadelphia, 1874; aged 80; died, recently, of arteriosclerosis.

Warren William Journeay, Boston; Tufts College Medical School, Boston, 1900; aged 61; died, February 19, of heart disease.

Nehemiah Butler Ford ✠ Skaneateles, N. Y.; Boston University School of Medicine, 1888; aged 64; died, Dec. 26, 1927.

James S. Vaughan, Powder Springs, Ga.; Atlanta Medical College, 1893; aged 65; died, February 22, of pneumonia.

James John Alexander, New York; Albany Medical College, 1871; aged 76; died, February 25, of heart disease.

Bureau of Investigation

SANATOLOGY

"The Only Science of Health"—And Its Founder

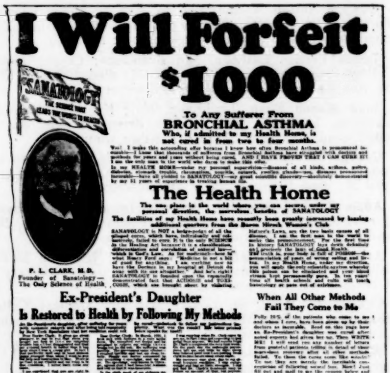
For the past three or four years, THE JOURNAL has been receiving inquiries of which the following are typical:

"Will you kindly give me information concerning the medical training and present professional standing of Dr. Percival L. Clark, who maintains a 'Health Home' in Chicago?"—(From an Illinois physician.)

"One of our employees came to our Medical Department requesting information concerning Dr. Clark's 'Health Home.' I have never heard of the institution nor have I been able to get any information concerning the place."—(From the Medical Department of a large mercantile house.)

"Please give me information in regard to Dr. Clark, who broadcasts from Station WCFL each Wednesday evening."—(From an Indiana physician.)

"I will be grateful if you will furnish me information concerning the methods and practice of Dr. Percival L. Clark, who is practicing a method which a patient of mine describes as 'Sanatology.' He was giving her two tablespoonfuls of castor oil every morning for three months."—(From a Chicago physician.)


I Will Forfeit $1000

To Any Sufferer From BRONCHIAL ASTHMA

Who, if admitted to my Health Home, is not cured in from two to four months.

SANABOLOGY

THE HOUSE THAT CLARK BUILT

P. L. CLARK, M.D.

Founder of Sanatology—The Only Science of Health

The Health Home

Ex-President's Daughter Is Restored to Health by Following My Methods

When All Other Methods Fail They Come to Me

NOW! Mail Me Your Answer to These Questions—

You will receive, without obligation, valuable advice based on your particular needs

P. L. Clark, M.D., The Health Home, Dept. 6012, 2637 Prairie Ave., Chicago

Some of P. L. Clark's advertising ballyhoo. Greatly reduced facsimile of one page of a four-page circular puffing Clark, "Sanatology" and "The Health Home."

According to our records, Percival Lemon Clark was born in 1866 and received a diploma in 1889 from Bennett Medical College, Chicago; at the time this was an eclectic institution. He was licensed to practice medicine in Illinois in 1889. Dr. Clark conducts a "Health School" and a "Health Home," and is the "Dean" of "The World's First University of Sanatology." "Sanatology" is a new cult. In 1927, Percival Lemon Clark went before a committee of the Legislature of Illinois in behalf of "House Bills Nos. 296, 297 and 411." These bills were for the purpose of getting legal recognition of the cult, Sanatology. Before this committee Dr. Clark set forth, at some length, his idea of what constitutes his "new science." Some of the things that the doctor told the committee are of interest in that they throw light on his conception of the science of medicine. Here are some of the statements made by Percival Lemon Clark as they appear in the report of his testimony given at that time:

"I am the first man in the history of the world to make the pronouncement and prove that acidosis and toxicosis are the two basic causes of all disease."

"Acidosis is brought about by bad foods, bad combinations of foods, producing acid which is absorbed, an excess of which is retained. Toxicosis is brought about by rotting putrefying material, more or less absorbed as it passes through the alimentary tract. That is all there is to disease."

"Diabetes is caused by acid toxic poison."

"I do not believe in the germ theory and some other things that hobble the medical profession."

"There are no schools [of Sanatology] except my own school, but I want these bills so I can establish a school and teach people in three years to cure disease. I have nurses in my place that know more about the cure of disease than any doctor in Chicago."

These are some of the gems of the pronouncements of the founder and creator of the new "Science of Sanatology," when he appeared before a legislative committee at Springfield, Illinois, in May, 1927.

Dr. Clark has used the advertising pages of newspapers, both classified and display. One classified advertisement reads:

"ASTHMA.—The incurable is curable! We know how. Call for free consultation."

In a display advertisement, Dr. Clark featured the cure of eczema, and stated:

"Right here in Chicago is the one place in the world where you can secure, under my personal direction, the full benefits of my great discovery of Sanatology—the most important advance yet made in the science of restoring health! You can either come to our Health Home or follow our advice in your own home. Let me tell you about it!"

Dr. Clark has, as part of his advertising paraphernalia, a publication that he calls "Be Your Own Doctor." This is issued at irregular intervals and is devoted to (1) Sanatology, (2) Percival Lemon Clark, (3) "Health School" merchandise and (4) denunciation of scientific medicine. In one issue of "Be Your Own Doctor," Dr. Clark sums up his attainments, thus:

"I cure the sick, cure the desperately sick, cure asthma, cure rheumatism, cure hay fever, cure goiter, and all the rest of the 'incurable' diseases."

This publication sells for 15 cents or $1.50 for twelve numbers:

"By subscribing for twelve numbers of 'Be Your Own Doctor,' you can keep in touch with the man who put the 'Heal' in health and founded Sanatology, which points the way to health for all the world. . . . A dollar and a half will insure you against mental and physical degeneration. . . . Fertilizer is good, but who wants to become a fertilizer? BE YOUR OWN DOCTOR."

Dr. Clark's merchandise accessories comprise such products as "Dr. Clark's Dextrinized Wheat Health School Brand," which is said to be "a nourishing, non-devitalized, non-demineralized, laxative food"; there are also "Cereal Bran," "Cracked Wheat," "Steel Cut Oatmeal" and "Dr. Clark's Cooked Whole Wheat." Then there is a "Sanatology Blower," which is noted for "the dry cleaning it gives the entire system." These "blowers" are said to "rejuvenate you" and come at $1.50 each which cannot be considered high in view of their potentialities.

Dr. Clark has, also, the "Sanatological Enema Bag and Attachments," which removes "the toxic poison [*sic!*] from the body." It appears to be an ordinary rubber hot water bottle with a hose attachment, which at its distal end has a plate with a rectal nozzle. In use, the nozzle is inserted into the rectum and the patient—or victim—sits on the plate which in turn rests on the hot water bag. The weight of the body naturally forces the water through the tube into the rectum. It would seem to be, in untrained hands, a particularly mischievous device and capable of doing an untold amount of harm. It sells for $7.50. Then, in the laxative field, there is the "Sanatological Oil" and the "Health School Laxative Tablet," to say nothing of "Mineral Salts," "Restorative Salts," "Laxative Salts" and many other products sold by the Health School.

Dr. Clark's *magnum opus* is "How to Live and Eat for Health," which is a book of 240 pages, devoted mainly to Dr. Clark's peculiar theories, dietetic and medicinal, and, incidentally, to advertising Percival Lemon Clark and the Health School. As has already been stated, Dr. Clark reduces pathology to simple terms: "Acidosis and toxicosis are the primary causes of all disease." In the field of nutri-

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tion Dr. Clark holds that "starches and proteins should never be eaten at the same meal. They are incompatible." His explanation is that as the digestion of starches begins in the mouth by the action of the alkaline saliva, and proteins require the acid gastric juice for their digestion, immediately the food leaves the mouth and reaches the stomach, the mass is rendered acid by the action of the gastric juice with the resultant stoppage of starch digestion. He, apparently, is unfamiliar with the researches of Cannon, Grutzner, etc., who have shown that there is no immediate general mixing of the stomach contents but that the food is held in the fundus of the stomach for some time, and that this portion does not rapidly mix its contents with the gastric juice. It is another case of "a little knowledge—." Just how Dr. Clark would explain the digestion of those many, many common foodstuffs that contain both proteins and carbohydrates is not altogether clear.

On the subject of vitamins, Dr. Clark exposes an equal ignorance. "Canned fruits and vegetables," says he, "have lost their vitamins because of being cooked." He admits, it is true, that canned tomatoes still contain vitamins. He, apparently, does not know, however, that canned peaches, canned raspberries, canned pineapple, canned spinach, canned cabbage, all contain vitamins in varying amounts.

On the subject of pathology the founder of Sanatology is equally original. "Germs," says Dr. Clark, "are components or results of disease, not its cause" and are "really our best friends." In discussing the causes and prevention of heart disease, the founder of Sanatology holds that heart disease among children is brought about mainly by three factors: (1) The use of pasteurized milk; (2) the drinking of chlorinated water, and (3) vaccination.

Of course, Dr. Clark uses testimonials for these are as essential to the commercial success of a cult as they are to the successful exploitation of a "patent medicine." Among the miscellaneous assortment of testimonials used by the founder of Sanatology, two stand out as being especially valuable for Dr. Clark's purposes. One is what purports to be a letter from Margaret Woodrow Wilson, the daughter of the late president. According to this letter dated November, 1921, Miss Wilson's "catarrhal trouble has all but disappeared" and she feels "at least sixteen years younger" due to Dr. Clark's teachings. The other testimonial that is made much of deals with the case of Mrs. Alice M. Baldwin of R. R. 2, Havana, Illinois. Dr. Clark reproduces what purport to be two letters: One is from the Mayo Clinic, dated May 25, 1926, in which it is declared that at operation Dr. C. H. Mayo found Mrs. Alice Baldwin to have a large inoperable cancer at the neck of the womb. Radium and x-ray treatments were given. The other letter purports to be from Mrs. Baldwin herself, in which the lady states that she is "well and strong" and doing all her own housework, and that, in her opinion, this happy state of affairs has been brought about by Dr. Clark's treatment.

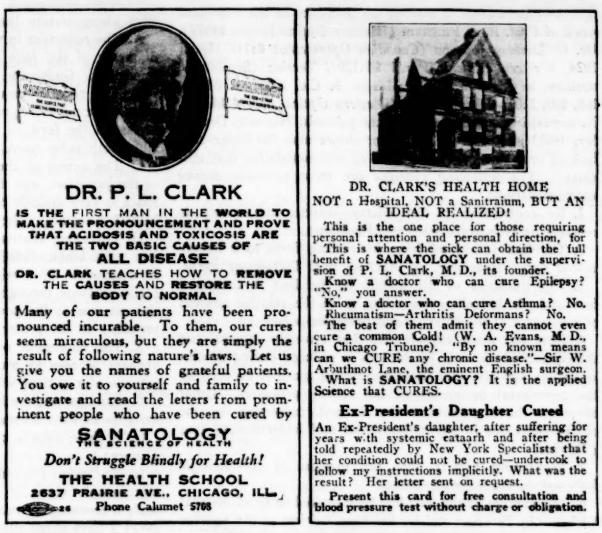
Dr. Clark's "Health Home," we are told, is "the only place in the world where Sanatological" methods are employed. Prices range from $50 a week and up—"the first 30 days to be paid in advance and weekly in advance thereafter." This is for in-patients. The charge for out-patients is $50 for the first month and $35 per month thereafter—"payable in advance."

The "Health School" has a correspondence course, which costs $50. Says Dr. Clark:

"In our Health School methods we correct the acidity of the body and eliminate the toxic poisoning. . . . When the blood is restored to normal any malady existing will be attacked and eliminated through the emunctories of the body. That is why I am able to cure asthma, arthritis deformans or rheumatism, diabetes, Bright's disease, and all the so-called incurable diseases."

A man who wrote in to the Health School for information regarding his condition mentioned the fact that he had eaten bread with his eggs and meat. Dr. Clark's reaction to this is characteristic:

"Now when you combine eggs, which are protein with bread, the egg must be digested in the gastric juice of the stomach which is acid. And there again the pepsin of the gastric juice stops acting upon the eggs, when the gastric juice becomes neutral or alkaline. So you see when you mix these two together, a large flow of alkaline saliva goes into the stomach and the gastric juice attempting to digest your eggs or meat or other protein is neutralized by the acid gastric juice and in just such proportion as neutralization takes place, digestion ceases and you have fermentation of the starches, producing acid and putrefaction of the protein, so that on through your twenty-six feet of intestines you have an acid, rotting protein mass traveling, and you absorb enough of it until you get thoroughly acid and toxic and gradually break down your health."


DR. P. L. CLARK
IS THE FIRST MAN IN THE WORLD TO MAKE THE PRONOUNCEMENT AND PROVE THAT ACIDOSIS AND TOXICOSIS ARE THE TWO BASIC CAUSES OF
ALL DISEASE
DR. CLARK TEACHES HOW TO REMOVE THE CAUSES AND RESTORE THE BODY TO NORMAL
Many of our patients have been pronounced incurable. To them, our cures seem miraculous, but they are simply the result of following nature's laws. Let us give you the names of grateful patients. You owe it to yourself and family to investigate and read the letters from prominent people who have been cured by
SANATOLOGY
THE SCIENCE OF HEALTH
Don't Struggle Blindly for Health!
THE HEALTH SCHOOL
2637 PRAIRIE AVE., CHICAGO, ILL.
Phone Calumet 5708
DR. CLARK'S HEALTH HOME
NOT a Hospital, NOT a Sanitraium, BUT AN IDEAL REALIZED!
This is the one place for those requiring personal attention and personal direction, for This is where the sick can obtain the full benefit of SANATOLOGY under the supervision of P. L. Clark, M. D., its founder.
Know a doctor who can cure Epilepsy? "No," you answer.
Know a doctor who can cure Asthma? No. Rheumatism—Arthritis Deformans? No.
The best of them admit they cannot even cure a common Cold! (W. A. Evans, M. D., in Chicago Tribune). "By no known means can we CURE any chronic disease."—Sir W. Arbuthnot Lane, the eminent English surgeon.
What is SANATOLOGY? It is the applied Science that CURES.
Ex-President's Daughter Cured
An Ex-President's daughter, after suffering for years with systemic catarrh and after being told repeatedly by New York Specialists that her condition could not be cured—undertook to follow my instructions implicitly. What was the result? Her letter sent on request.
Present this card for free consultation and blood pressure test without charge or obligation.

Photographic facsimile of the obverse and reverse sides of an advertising card put out by Clark.

Especially is Dr. Clark obsessed with the idea that refined sugar and white bread are both dietetic crimes. Back of these conditions are the two specters, the "Sugar Trust" and the "Bread Trust." Dr. Clark also injects some United States history into his condemnation of those who would debase the food supply, thus:

"The people have been robbed of such sums that the sugar aristocracy finally became strong enough so that the *Maine* was blown up from the inside that we might have excuse for collaring the control of the sugar of Cuba and the Philippines."

So it was the Sugar Trust that blew up the *Maine* and brought on the Spanish-American War! Nice people these "sugar aristocracy"! Dr. Clark is equally bitter against white flour and certain other products that he claims are devitalized. "Cream of Wheat," "Puffed Rice," pearl barley, ordinary cornmeal and most of the corn flakes are "unfit foods"—if we are to believe Dr. Clark—while white bread,

biscuits, crackers, and all foods made from white floor are "positively unfit for human consumption."

It is a sorry spectacle when such nonsense as this can be given publicity through the press and over the radio. It is still more pitiful that the sick, particularly the poor, should be led by advertising literature and radio salesmanship to invest their meager funds in a search for relief through Percival Lemon Clark.

Correspondence

"THE CRYSTALLINE LENS SYSTEM"

To the Editor:—As a general practitioner interested in ophthalmology, I have read with much interest Dr. J. O. McReynolds' paper on "The Crystalline Lens System" (THE JOURNAL, January 7).

I agree with Dr. Blaauw of Buffalo that it is disturbing; it is also incomplete in making no reference to the important work of Prof. E. F. Fincham (*Western Optical World* **14**:77), Dr. G. Lindsay Johnson (*Canadian Optometrist* **6**:117 [Dec.] 1924, *Western Optical World* **14**:129), Terrien (Sémiologie oculaire, le cristallin, Paris, Masson & Cie, 1926, pp. 84, 96, 108, 109, 110), Benson Kirby (*Western Optical World* **14**:33), Noiszewski (Congrès des Oculistes polonais, Warsaw, December, 1921) and others. The paper shows also the distressing lack of unanimity as to the facts of accommodation that still exists. The following changes are most probable during accommodation:

1. By contraction of the ciliary muscles the zonule is relaxed, as Helmholtz believed (Fincham).

2. The lens is altered from its resting form to a hyperboloid shape anteriorly, as Fincham and Tscherning agree.

3. The thickness of the middle of the lens is increased fore and aft, but observers differ as to the relative amount of movement of the anterior and posterior poles.

4. Hess has made experiments that strongly suggest that the equatorial diameter of the lens is reduced during accommodation, and also that the circumlental space is reduced by the centripetal movement of the ciliary processes. Other observers have confirmed the inward movement of the ciliary processes in physostigminized and iridectomized eyes (Terrien).

5. Tscherning asserts that the margin of the lens is flattened during accommodation.

6. The capsule of the lens has been proved to be of unequal thickness by Bowman and by Fincham, thicker at the equator than in the center of the anterior surface and especially thin over the posterior surface of the lens.

7. Lindsay Johnson, supporting the hydraulic theory, believes that the ciliary muscle, especially Müller's fibers, acts like a sphincter and reduces the circumlental space when it contracts by hydraulic pressure on the edge of the lens, which, as McReynolds says, is plastic. The lens must change its shape in response to the grip of the muscle; the lens is squeezed.

I venture to suggest that the mechanism of accommodation might be explained by what Terrien calls "the mixed opinion"; that is to say, by combining the observations of Helmholtz, Tscherning and Fincham with the hydraulic theory of Noiszewski and Johnson.

A. When the ciliary muscle contracts, the zonule is relaxed. Consequently a change in the shape of the lens is facilitated.

B. Owing to the thickness of the capsule (its firm adherence to the lens substance) at the equator, the flattening of the lens at its margin observed by Tscherning might be only apparent, as a result of contrast with the central thickening.

C. The equatorial or transverse diameter of the lens is diminished not by the tension or relaxation of the zonule but by water pressure. The lens margin being driven inward centripetally by the ciliary sphincter, the lens substance at the equator must be displaced toward the center of the lens. The anteroposterior diameter of the lens must therefore be increased.

D. The pressure in the posterior chamber may be reasonably assumed to increase as a result of the contraction of the ciliary muscle assisted by the resistance of the iris in front (G. L. Johnson).

E. The pupillary aperture of the iris being a weak area, the anterior pole of the lens may be assumed to project forward at this point, where its capsule is thin.

F. The recoil of the lens to its resting shape is effected by:

1. The relaxation of the muscle.
2. A moderate tautening of the zonular fibers.
3. The elasticity of the capsule.
4. Water pressure in the anterior chamber (Kirby) acting on the anterior surface of the lens.

I would particularly emphasize our want of exact knowledge along certain lines:

A. The reduction in width of the transverse (or equatorial) diameter of the lens during accommodation is exceedingly important. Gullstrand seems doubtful of its occurrence.

B. The relative movements of the anterior and posterior poles have not been precisely established. Most observers lay stress on the forward projection of the anterior pole. Possibly both poles move (Terrien, p. 84).

C. The extent of the centripetal and centrifugal movement of the processes, and the variation in size of the circumlental space is very difficult to estimate, as these changes take place behind a curtain. They cannot be seen in a normal eye.

D. The exact anatomic relations of the ciliary body to the lens in a longitudinal direction ought to be clearly defined in diagrams. This might be best ascertained by a series of serial sections through the eyeball, working backward from the anterior to the posterior pole of the lens and cut (equatorially) to the posterior limit of the ciliary muscle.

E. The movement of the anterior pole of the lens could perhaps be seen by watching the central dot on the anterior capsule of a patient with a small anterior polar cataract.

F. Can patients with aniridia accommodate? Can the margins of their lenses be observed?

G. Is there such a condition as "negative accommodation"? (Rogers.)

In conclusion I should like to emphasize the importance of stereoscopic views of this region. In Prof. Arthur Thomson's Stereoscopic Atlas of the Eye (Oxford, Clarendon Press, 1912) I have noted that:

The canal of Petit is sometimes clearly defined, as in plate VIII.

The position of the ciliary body in relation to the lens (plate V) would seem to indicate that, should pressure be exerted by it on the lens, it would be likely to take effect chiefly on the equator and anterior half of the lens.

In plates X and XI the *width* of the equator of the lens is well shown.

Plate XVII is a beautiful demonstration of the zonular fibers, and seems to show that the suspensory ligament is freely permeable, as McReynolds points out.

REGINALD ARTHUR YELD, M.D., M.A. (Cantab),
Edgewood, B. C.

[The letter was referred to Dr. J. O. McReynolds, who replies:]

In my paper before the Section on Ophthalmology of the American Medical Association last June I freely confessed that my introductory studies of the crystalline lens system were incomplete and constituted an inquiry rather than a conclusion. I carefully refrained from any definite and final attitude on the complex problem of the mechanism of accom-

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modation, because I felt that what we needed at this time was not an argument based on the excellent researches that were made, for the most part, many years ago, but rather an accumulation of additional facts pertaining to the lens system. I have been trying to prepare actual anatomic specimens and accurate photographs of these so that they would be available. My hope has been also to stimulate interest in a somewhat neglected field of research so that the fruits of many and better minds would be added to our present knowledge of this fascinating phase of our science.

It would be interesting to review the work of all the splendid contributors to this subject, but in the very imperfect paper which I presented at Washington I felt that quotations from three of the outstanding authorities on physiologic optics would be sufficient to suggest that there were even now many problems in physiologic optics still unsolved. Nothing could have been more foreign to my thought or purpose than a word of ingratitude or irreverence for the splendid achievements of the master-minds that have enriched our knowledge of this little zone of absorbing interest. Their brilliant records are forever secure and nothing can dim their luster. The memory of Hermann von Helmholtz will always be a perpetual inspiration, and the marvelous work he has wrought will continue to be the guiding star of our highest hopes and best endeavors. And yet I feel that he was so great a man that his spirit surviving his generation would urge us all not to rest in quiet inaction, but in faith and humility add our little offerings of truth to the sum of human knowledge.

JOHN O. MCREYNOLDS, M.D., Dallas, Texas.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF ENCEPHALITIS WITH ACRIFLAVINE (TRYPAFLAVINE)

To the Editor:—A woman of middle age, married, has had chronic lethargic encephalitis beginning in 1919 and has consulted probably the best authorities of Baltimore and New York, yet, like most of these patients, with little or no benefit. She has not gotten much worse in nine years, or at least has shown little change after the second or third year, but she has the distinctive parkinsonian look and symptoms. She has taken nothing for her condition for over two years except scopolamine hydrobromide, at first 1/500 grain and for some months now 1/100 grain twice daily, which helps to control her nervous condition. My immediate inquiry is whether you are able to give me anything more in detail concerning the treatment suggested by Marx of Munich, mentioned under Current Medical Literature (THE JOURNAL, February 4, p. 426). Do you know of this treatment being used in this country, and would you advise me to give it a trial? Where can this "aqueous solution of trypaflavine" be secured. It seems to be a new preparation of which I know absolutely nothing. Is it or not an arsenical preparation? Of course, if you should advise against it as either dangerous or not likely to be of any great value, I should not think of giving it a trial. Please omit name.

M.D., Arizona.

ANSWER.—In 1912, Ehrlich found that the acridine dye diaminomethylacridinium chloride possessed therapeutic properties when used in trypanosome infections and, hence, he termed it trypaflavine. Later this substance was investigated in England, particularly in regard to its effect as a wound antiseptic, and the name acriflavine was applied to the hydrochloride of it. In the foreign literature the term "trypaflavine" has been applied somewhat loosely to the hydrochloride (acriflavine; acriflavine hydrochloride) and to the free base (neutral acriflavine; acriflavine base). The latter is used in intravenous injections. Descriptions of acriflavine and proflavine are to be found in New and Nonofficial Remedies, 1927.

A number of German investigators, notably Stephan, have stated, on the basis of experimental and clinical observations, that acriflavine (trypaflavine) also affects protoplasm by activating it, as is evidenced by the appearance of a monocytosis, and that this accounts for the clinical results noted when this dye is used in the treatment of encephalitis, its sequelae and complications.

E. Marx (*München. med. Wchnschr.* **74**:1916 [Nov. 11] 1927) reviews the entire situation and ardently advocates the use of this dye in the treatment of chronic lethargic encephalitis. He claims to have obtained satisfactory results. Of forty cases, fourteen were markedly improved, twenty-two were improved and only four were unaffected. These four were extremely severe cases of parkinsonism. However, among the twenty-two improved cases was one of unusually severe parkinsonism. Every other day he injects a 1 in 20 (0.1/20,0) aqueous solution of the dye intravenously for six injections; then, a 2 in 20 (0.2/20,0 solution every other day, for six injections. The patients were markedly improved in many instances. They could walk, some for long distances, without tiring; they could perform many muscular actions; in fact, their physical condition was greatly improved. Even the facial expression was changed. Hyperkineses, tremor and similar symptoms were not markedly improved. In such cases, scopolamine remains the drug of choice. But even in these cases the mental condition of the patient was notably improved. Untoward effects from the use of the dye were not noted, except slight nausea, of short duration, and, in only one case, chills and fever of twenty-four hours' duration. Patients exposed to direct sunlight immediately after receiving an injection complained of itching of the skin, but this did not last long. On the whole, Marx feels that much good may be derived from this treatment of cases in which heretofore no other treatment has been of avail.

AMERICAN, FRENCH AND GERMAN UNITS OF ANTIDIPHTHERIC AND ANTITETANIC SERUM

To the Editor:—Could you explain the difference in the standardization of antidiphtheric and antitetanic serums according to American, French and German methods? I should like also references to literature. Please omit name.

LABORATORY DIRECTOR, Cuba.

ANSWER.—Diphtheria antitoxin is standardized in all countries in terms of the Ehrlich unit, official standards of which are kept in control laboratories under proper conditions to guard against deterioration. Testing of diphtheria antitoxin is done by the injection in guinea-pigs of the L+ dose of toxin combined with varying amounts of the unknown antitoxin, the critical dose of which permits death of the guinea-pig in the same time as does one unit of the standard; viz., approximately ninety-six hours.

Tetanus antitoxin is tested in much the same manner as diphtheria antitoxin. The American unit, established and distributed by the Hygienic Laboratory of the U. S. Public Health Service, is used by the United States and many foreign countries, and has formed the basis for an international unit which has been adopted by the League of Nations. This international unit is exactly one-half the strength of the American unit; e. g., 3,000 international units is equal in strength to 1,500 American units. Guinea-pigs or mice are used in tetanus antitoxin titrations.

An in vitro method of testing antitoxins has lately been described which depends on the flocculation of a toxin the flocculation value of which has been determined with an antitoxin of known unitage. This method is used by some manufacturers in preliminary titrations to determine the approximate potency of unknown products.

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"LYSOL" AND SIMILAR PREPARATIONS

To the Editor:—We have had some late discussion concerning the extent to which we can use lysol and similar preparations for the purpose of disinfection, and we will be pleased to have a letter from you advising us as to any and all of the findings which you have along this particular line. We do not, at present, happen to be using lysol, but we are using cresol compound, which is sold by a well known and standard house, and is guaranteed by them to be made according to the U. S. P. formula.

GEORGE L. ROWE, Des Moines, Iowa.

ANSWER.—An article "The Evolution of a Proprietary—Lysol" published in THE JOURNAL, Dec. 14, 1912, page 2173, and reprinted in the Propaganda for Reform in Proprietary Medicine, Volume 1, explains that Lysol is not the discovery of any one person but was evolved gradually and is a good

illustration of the way in which manufacturers appropriate the discoveries of others, develop them and turn them to proprietary use. The article concluded:

The ill deserved patent protection for Lysol happily expired long ago and the product can now be made by any one. In view of the nondescriptive character of the name "Lysol" and the danger in using such names in connection with potent and poisonous remedies, this cresol-soap solution has been admitted to pharmacopeias, not under the original name "Lysol" but under descriptive names such as that in the United States Pharmacopeia—"liquor cresolis compositus."

In 1912 the Council on Pharmacy and Chemistry published a report in which objection was made to the method of exploitation which tended toward its indiscriminate and ill advised use by the public (Rep. Coun. Pharm. Chem., 1912, p. 53).

The use of cresol in the form of the pharmacopeial product liquor cresolis compositus rather than under a proprietary name is in the interest of rational therapy.

A chapter on cresol and cresol preparations appears in New and Nonofficial Remedies, followed by the cresol preparations which have been found acceptable for New and Nonofficial Remedies.

SEROSALINE

To the Editor:—Can you give any information as to the constituents and therapeutic action of Serosaline, manufactured or, rather, marketed under the label of the Davis-Johnson Company, 180 North Wabash Avenue, Chicago? I have been recently requested to administer this preparation to a patient and am not able to ascertain what it is.

E. L. MOTSINGER, M.D., Freeport, Ill.

ANSWER.—From the advertising which has been sent to physicians it appears that "Serosaline" is similar to the preparation Sulcitacium which the Council on Pharmacy and Chemistry found unacceptable for New and Nonofficial Remedies because its composition is not declared and because the therapeutic claims advanced for it are not supported by acceptable clinical evidence (THE JOURNAL, July 10, 1926, p. 116).

While Sulcitacium was said to be indicated "in the treatment of Hypertension" and was administered orally, Serosaline is claimed to be "definitely effective in the various types of acute and chronic Nephritis" and is to be administered intravenously. As in the case of "Sulcitacium," the advertising for "Serosaline" contains only vague and indefinite statements of composition. It is to be hoped that few physicians will assume the responsibility of administering intravenously a preparation the composition of which they do not know.

TRANSKUTAN

To the Editor:—Will you give me any information you may possess relative to the use of a compound known as "Transkutan?" This "stuff" has come to my attention through one of my patients and I have taken pains to secure some of it. It is one of those mysterious importations, shrouded in much mystery, very strikingly labeled in many colors, the most striking of which is the price tag. This compound strikes me as one more nostrum because its promised marvels and its great mystery do not mesh with intelligent medicine.

D. G. SMITH, M.D., Schenectady, N. Y.

ANSWER.—According to advertising matter in our files, "Transkutan" is being marketed by Transkutan, Inc., 25 West Forty-Third Street, New York. Other advertising matter bears the name of P. L. Frailey, 25 West Forty-Third Street, New York.

Neither Transkutan, Inc., nor P. L. Frailey has requested an examination of Transkutan by the Council on Pharmacy and Chemistry, and we appear to have no information in regard to this "brine combination of natural mineral springs and extracts of plants abounding in terpenes" other than advertising matter issued by those interested in the preparation.

The material in our files indicates that the public is to be exploited by means of newspaper advertisements and, as is so often the case, that physicians are to be the unsuspecting promoters of this proprietary nostrum.

MEINICKE TEST FOR SYPHILIS

To the Editor:—Please let us know something about the Meinicke turbidity test for syphilis—whether it is desirable and accurate for small hospitals.

SISTERS OF ST. FRANCIS, Logansport, Ind.

ANSWER.—It is believed that on the basis of available evidence the Wassermann test and the Kahn test are superior to the Meinicke test.

DISEASES OF THE ARCTIC REGION

To the Editor:—Referring to a recent inquiry and reply on this subject, may I emphasize that, to establish a sickness center, people must stay at one point long enough to get acquainted. At Ivigtut, Greenland, there are about 300 men and women, Eskimos and Danes, staying there all the year. These people do not suffer especially from rheumatism, tuberculosis or cancer. Our people going there suffer from headache due to ice glare, toothache, neuralgia, boils and dry skin.

ARCHIBALD L. DIX, M.D., Philadelphia.

INSTRUMENTAL MASSAGE OF THE PROSTATE

To the Editor:—May I confirm the protest made by Dr. Charles H. Garvin (THE JOURNAL, March 3, p. 715) on the subject of instrumental massage of the prostate? The opinion that "rectal massage should always be performed with a massage instrument to insure proper evacuation of the seminal vesicles," is capable of doing much harm. As Dr. Garvin so correctly points out, prostatic and vesicular massage not only is an art but an operation of considerable potential danger, even when performed manually; but when this delicate and serious procedure is carried out through a metal instrument with a "club-shaped end," the element of danger is increased many times.

Any man who cannot massage the prostate and seminal vesicles manually ought to leave the procedure alone. I believe the instrument recommended is the one designed many years ago by my lamented friend and colleague, George K. Swinburne, of New York, who often spoke to me of the danger inherent in a careless use of the instrument. In his clinic, massage was frequently done, but I do not recall ever having seen him use the instrument which bears his name in surgical catalogues. I believe that Dr. Garvin is absolutely correct when he says that digital massage of the prostate is the only safe and thorough method.

ABRAHAM L. WOLBARST, M.D., New York.

TREATMENT OF MALARIA

To the Editor:—With regard to the inquiry concerning the treatment of malaria (THE JOURNAL, February 4, p. 404), it cannot be too often emphasized that quinine has no peer in estivo-autumnal fever. Failure to get results in patients who are not moribund on admission is so rare as to raise a doubt as to the drug's having been taken. In a rather large practice extending over many years I do not recall any who have been checked up sufficiently well to warrant belief in compliance with orders. The effect is delayed when there are concurrent diseases, such as sepsis, focal infection, syphilis, tuberculosis or diabetes.

Plasmochin is to be preferred to quinine in tertian malaria if the species is definitely established. Indeed, one may differentiate from estivo-autumnal malaria by its promptness of action, which is second only to quinine. I prefer it because of the definite disintegration of gametes under its use. It is the only drug I have tried (among very many) which has this effect.

If your correspondent is troubled because of the persistence of crescents which are clinically inert, he can get rid of them by the use of plasmochin (this drug is not very effective for vegetative estivo-autumnal parasites).

Arsphenamine, methylthionine chloride, acetarsone and sodium cacodylate are effective in tertian malaria in the order named, but inferior to quinine or to plasmochin.

As to the mode of administration, it has been my practice since the publications of Sinton and Fletcher to precede each dose of quinine by thirty minutes with from 30 to 60 grains (2 to 4 Gm.) of sodium bicarbonate or its equivalent in effervescent salt. It prevents albuminuria and appears to facilitate absorption, which is by the mesenteric vessels, probably as nascent alkaloid dissolved in bile. I have no patience with those who give quinine intravenously if it can be swallowed and retained.

WILLIAM KRAUSS, M.D., Memphis, Tenn.
Professor of Tropical Medicine, University of Tennessee College of Medicine.

THE PACHON OSCILLOMETER

To the Editor:—I would take exception to the answer in Queries and Minor Notes (THE JOURNAL, February 25) in reference to the Pachon oscillometer. I purchased one of these instruments in 1918 and was enthusiastic about it until I found that I could not depend on my readings.

I later found my opinion of the unreliability of this method confirmed by C. Lian in the third edition of Sergent's Technique clinique médicale, Paris, Maloine et Fils, pages 235-237. He states that the diastolic pressure is the same with the oscillometric and auscultatory methods, but that the advantage rests with the latter, which, by making the determination a little easier and quicker, renders the more cumbersome apparatus unnecessary. When it comes to the systolic measurement, Lian says the oscillometric method gives readings 2 or 3 cm. higher than the auscultatory, and that he and L. Morel demonstrated on dogs that blood does not flow through a vessel at the moment that one reads the systolic pressure with the oscillometer, but when the pressure is lowered the blood starts to flow simultaneously with the return of pulsation. He states that even with long practice with the oscillometer it is not rare to find it difficult to fix the systolic pressure at a definite point within 2 cm. and sometimes within 3 or 4 cm., and sums up by saying that the auscultatory method is the best means of measuring the systolic blood pressure.

Since the auscultatory method is well established in this country, it would seem a backward step to recommend the oscillometric method, which is thus criticized after long use by a prominent French clinician.

GEORGE T. JOHNSON, M.D., Terre Haute, Ind.

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Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 9-10. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville. Sec., Homeo. Bd., Dr. A. A. Pringle, Eureka Springs. Sec., Eclectic Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith.

COLORADO: Denver, April 3. Sec., Dr. Philip Work, 324 Metropolitan Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 10. Sec., Dr. Edgar P. Copeland, Suite 110, 1801 Eye St., Washington.

HAWAII: Honolulu, April 9-12. Sec., Dr. James A. Morgan, Room 48 Young Bldg., Honolulu.

IDAHO: Boise, April 3. Commissioner of Law Enforcement, Hon. F. E. Lukens, Boise.

ILLINOIS: Chicago, April 10-12. Supt. of Reg., Mr. V. C. Michels, Springfield.

LOUISIANA: New Orleans, May 1. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 830 Canal St., New Orleans.

MINNESOTA: Minneapolis, April 17-19. Sec., Reg. Bd., Dr. A. E. Comstock, 524 Lowry Bldg., St. Paul. Basic Science examinations, April 3. Sec., Basic Science Bd., Dr. E. T. Bell, U. of Minnesota, Minneapolis.

MONTANA: Helena, April 3-5. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEBRASKA: Omaha, May 1. Sec., Basic Science Bd., Mr. Lincoln Frost, Lincoln.

NEVADA: Carson City, May 7-9. Sec., Dr. Edw. E. Hamer, Carson City.

NEW MEXICO: Santa Fe, April 9-10. Sec., Dr. Wm. T. Joyner, Roswell.

RHODE ISLAND: Providence, April 5-6. Sec., Dr. B. U. Richards, State House, Providence.

Ohio December Examination

Dr. H. M. Platter, secretary of the Ohio State Medical Board, reports the oral, written and practical examination held at Columbus, Dec. 7-9, 1927. The examination covered 10 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 36 candidates examined, 34 passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
College of Medical Evangelists		(1927)	86.4
Rush Medical College		(1927)	80.4
University of Minnesota Medical School		(1922)	84.8
St. Louis University School of Medicine	79.3, 79.8, 79.9, 80.1, 80.3, 81.1, 84.9, 85.8, 87.2	(1927)	76.1, 78,
Washington University School of Medicine		(1927)	85
Cornell University Medical College		(1927)	83.3
Starling Medical College, Columbus		(1880)	75
Ohio State University College of Medicine		(1927)	79.5
Hahnemann Med. Coll. and Hosp. of Phila., Homeo.		(1927)	81.4
Jefferson Medical College of Philadelphia		(1927)	81
University of Pittsburgh School of Medicine		(1927)	81.4
McGill University Faculty of Medicine		(1926)	84.2
Queen's University Faculty of Medicine		(1926) 76.6; (1927)	84.4
University of Manitoba Faculty of Medicine		(1924)	89
University of Toronto Faculty of Med.	(1925) 84.7; (1926) 80.8, 83.7, 87; (1927) 84.8	(1920) 81.6; (1922)	80.5;
University of Western Ontario Medical School		(1927)	84.2
University of Berlin, Germany		(1924)	78.3

College	FAILED	Year Grad.	Per Cent
University of Naples, Italy		(1914) 58.1;*	(1923) 30*

* Verification of graduation in process.

Michigan Reciprocity Report

Dr. Guy L. Connor, secretary of the Michigan State Board of Registration in Medicine, reports that 79 physicians were licensed by reciprocity from Jan. 1, 1927, to Jan. 1, 1928. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine		(1925)	Indiana
Howard University School of Med.		(1926) Dist. of Columbia,	Kansas
Bennett Medical College		(1909)	Illinois
Hahnemann Med. College and Hosp., Chicago		(1899), (1920)	Illinois
Loyola University School of Medicine		(1923), (1927)	Illinois
Northwestern Univ. Med. School	(1926) Wisconsin	(1925), (1926, 2), (1927)	Illinois
Northwestern Univ. Woman's Med. School, Chicago		(1885)	Illinois
Rush Medical College	(1924), (1925, 2), (1926) Illinois; (1926) Ohio	(1911)	S. Dakota
University of Illinois Coll. of Med.		(1916), (1923), (1925, 3)	Illinois
Indiana Univ. School of Med.		(1922, 2), (1923, 2), (1925)	Indiana
State University of Iowa College of Med.		(1925), (1926, 2)	Iowa
Kentucky School of Medicine, Louisville		(1903)	Kentucky
Johns Hopkins University School of Medicine	(1922) Maryland	(1917)	Maine
University of Maryland School of Medicine and the College of Physicians and Surgeons		(1923), (1924)	Maryland
Boston University School of Medicine		(1912)	Mass.
Harvard University Medical School		(1911)	Missouri
Tufts College Medical School		(1919) Maine; (1925)	Mass.
University of Minnesota Med. School		(1925), (1926), (1927)	Minnesota
Northwestern Medical College, St. Joseph		(1889)	Missouri
St. Louis University School of Medicine		(1924)	Missouri
University Medical College of Kansas City		(1904)	Nebraska
Creighton University School of Med.		(1925, 2), (1926)	Nebraska
Lincoln Medical College, Eclectic, Lincoln		(1904)	Nebraska
University of Nebraska College of Medicine		(1924), (1926)	Nebraska
Columbia University College of Phys. and Surgs.		(1918)	Ohio
Eclectic Medical College, Cincinnati		(1926)	Ohio
University of Cincinnati College of Medicine		(1918)	Ohio
University of Oklahoma School of Medicine		(1926)	Oklahoma
Hahnemann Medical College and Hospital of Philadelphia, Homeopathic		(1926)	Penna.
Jefferson Medical College of Philadelphia	(1917) Delaware	(1906)	Penna.
Temple University School of Medicine		(1917)	Penna.
University of Pennsylvania School of Medicine		(1916)	Penna.
Women's Medical College of Pennsylvania		(1925)	Penna.
Meharry Medical College	(1906, 2), (1908), (1914) Georgia	(1902) Arkansas; (1903)	Kentucky
Memphis Hospital Medical College, Memphis		(1909)	Tennessee
University of Tennessee College of Medicine		(1924)	Tennessee
Vanderbilt University School of Medicine		(1924), (1925)	Tennessee
Medical College of Virginia		(1924)	W. Virginia
McGill University Faculty of Medicine		(1926)	Ohio
Univ. of Toronto Faculty of Med.		(1921) Illinois; (1925)	Ohio
University of Western Ontario Medical School		(1923)	Ohio

Illinois October Examination

Mr. V. C. Michels, superintendent of registration of the Illinois Department of Registration and Education, reports the written and practical examination held at Chicago, Oct. 4-7, 1927. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 79 candidates examined, 64 passed and 15 failed. Thirty-seven candidates were licensed by reciprocity and 6 candidates were licensed by endorsement of their credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Howard University School of Medicine		(1926)	80
Chicago Medical School		(1927) 76, 76, 78, 79,	83
General Medical College, Chicago		(1923)	75
Loyola University School of Medicine		(1927) 80, 82, 82,	84
Northwestern University Medical College	77, 77, 78, 79, 79, 79, 79, 80, 82, 84, 85, 86	(1927)	75, 76,
Rush Medical College	(1926) 77; 79, 79, 80, 81, 81, 82, 83, 83, 83, 85, 89, 90	(1927)	75, 78,
University of Illinois College of Medicine	82, 82, 82, 83, 83, 84, 84, 85, 86, 87	(1927)	78, 78,
University of Louisville School of Medicine		(1926)	75
Johns Hopkins University School of Medicine		(1926)	80
St. Louis University School of Medicine		(1926) 76,	79, 81
Washington University School of Medicine		(1903) 75; (1926)	84
McGill University Faculty of Medicine		(1902)	79
University of Toronto Faculty of Medicine		(1926)	82
German University of Prague, Czechoslovakia		(1925)	76
University of Greifswald, Germany		(1921)	75

College	FAILED	Year Grad.	Per Cent
Chicago College of Medicine and Surgery		(1916)	73
Chicago Homeopathic Medical College		(1900)	71
Chicago Medical School	(1926) 65; (1927) 64, 65, 67, 69,	71,	71
University of Illinois College of Medicine		(1903)	72
Miami Medical College, Cincinnati		(1903)	72
Meharry Medical College		(1914)	*
Bohemian University of Prague, Czechoslovakia		(1919)	68
University of Königsberg, Germany		(1913)	71
University of Naples, Italy		(1921)	65

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado School of Medicine		(1926)	Colorado
Yale University School of Medicine		(1921)	Vermont
Rush Medical College		(1917) Minnesota; (1925)	Missouri
University of Illinois College of Medicine		(1909)	Iowa
Indiana University School of Medicine		(1922), (1926)	Indiana
University of Kansas School of Medicine		(1926)	Kansas
University of Louisville School of Medicine		(1912)	Kentucky
Tulane University of Louisiana School of Medicine	(1926) Louisiana	(1908)	Mississippi
Johns Hopkins University School of Medicine		(1901)	Maryland
Harvard University Medical School		(1915)	California
University of Michigan Medical School		(1925), (1926, 2)	Michigan
University of Minnesota Medical School		(1921), (1922)	Minnesota
St. Louis University School of Med.	(1925) Missouri	(1926) Minnesota, Missouri, Utah	
Washington University School of Medicine		(1918)	Wisconsin
University of Nebraska College of Medicine		(1923)	Nebraska
Eclectic Medical College, Cincinnati		(1926, 2)	Ohio
University of Cincinnati College of Medicine		(1920)	Indiana
Jefferson Medical College of Philadelphia		(1916), (1918)	Penna.
University of Pennsylvania School of Med.		(1896), (1917)	Penna.
University of Pittsburgh School of Medicine		(1926)	Penna.
Meharry Medical College		(1926)	Tennessee
University of Tennessee College of Medicine		(1924)	Tennessee
University of Vermont College of Medicine		(1925)	Vermont
University of Virginia Department of Medicine		(1926)	Virginia
McGill University Faculty of Medicine		(1924)	Maryland

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement with
Rush Medical College		(1926), (1927) N. B. M. Ex.;	(1927) U. S. Navy
University of Illinois College of Medicine		(1927)	U. S. Navy
Johns Hopkins University School of Medicine		(1925)	N. B. M. Ex.
Leonard Medical School		(1904)	U. S. Army

* No grade given.

Book Notices

"OPIUM." By John Palmer Gavit. With an introductory note for American readers. Cloth. Price, $3.50 net. Pp. 308. New York: Brentano's, 1927.

The international aspect of the opium problem with its many complex ramifications constitutes the chief feature of this book. Gavit followed closely the actions of The Hague and the Geneva conferences on the narcotic problem and gives in this volume in an interesting form the varied reasons for and methods of continuation of the opium industry. "By the Hague Convention the individual governments assumed definite obligation to limit the manufacture, sale and use of these narcotic drugs to legitimate purposes, and to cooperate in the fulfilment of these obligations. The governments have not done this. The solemn international obligations have not been fulfilled." The various nations have apparently taken the attitude, as Gavit puts it, that "anything immediate is impracticable. If we don't sell it, somebody else will. Besides, we need the money!" Gavit believes, therefore, that opium control to medical and scientific in contrast to "legitimate" needs rests on the abandonment of the opium industry as a source of revenue. "The government of the Union of Socialistic Soviet Republics has come to the conclusion that, in connection with the task of fighting the spread of opium and other drugs, the various states are striving to satisfy their own commercial interests and gain material benefits. Under such circumstances, Soviet Russia considers that its participation would be useless. . . . Paper legislation [is] nullified as to effectiveness by reckless willingness on the part of each [nation] to produce of narcotics many-fold the amount legitimately required by all, and to let it flow to any market that will take it. Once produced it must go somewhere. Narcotics will flow about the world until the producing nations stop making them beyond legitimate needs."

THE TOXEMIAS OF PREGNANCY. A Clinical and Biochemical Study. By J. N. Cruickshank, J. Hewitt, and K. L. Couper. Medical Research Council. Special Report Series, No. 117. Paper. Price, 4s. net. Pp. 128. London: His Majesty's Stationery Office, 1927.

This contains an analysis of an intensive study of 200 patients who had albuminuria during the second half of pregnancy. The study consisted of a complete clinical examination, numerous chemical tests of the blood and urine, and tests of hepatic function. The main points in the treatment were the withholding of all food until the amount of albumin was less than 0.1 per cent, thorough evacuation of the colon, and stimulation of moderate diaphoresis. For convulsions, morphine, chloral hydrate or potassium bromide was given. Labor was terminated by forceps if convulsions continued into the second stage, but accouchement forcé and cesarean section were never performed. In spite of the enormous amount of energy expended, the results of the blood analyses showed such great variations that it was difficult and often impossible to make a diagnosis of the type of toxemia from the chemical observations alone. The results of the urinary analyses likewise had only a limited value and the results of the tests of liver function indicated that not one of them is of real service in the diagnosis or prognosis of the various forms of toxemia of pregnancy. The authors give a clear exposition of the etiology of the toxemias of pregnancy and conclude that if these toxemias have a common cause it is some form of intoxication by the breakdown products of placental tissue.

An astonishing fact brought out in the report is the unusually high incidence of the various forms of toxemia of pregnancy at the Glasgow Royal Maternity and Women's Hospital. During the ten years 1913-1922, among 23,630 patients, hyperemesis gravidarum occurred in 1.21 per cent, albuminuria and nephritis in 2.84 per cent, preeclamptic toxemia in 0.15 per cent and eclampsia in 3.6 per cent. The last figure is appalling when contrasted with the fact that at the Chicago Lying-In Hospital among 29,587 obstetric patients the incidence of eclampsia was only 0.28 per cent (J. P. Greenhill). This difference is undoubtedly due to the vastly inferior grade of prenatal care given the women in Glasgow. There is no doubt that in the United States prenatal care is on a much higher plane than anywhere else in the world, and this fact explains our relatively low incidence of eclampsia. In spite of this, the incidence of eclampsia in the United States is still entirely too high because by proper prenatal care eclampsia can be eliminated almost entirely. In the Glasgow series the maternal mortality for the toxemia cases averaged 22.4 per cent, whereas the death rate for all cases admitted averaged 3.8 per cent. The latter figure is likewise appalling as a maternal death rate and is also in part due to poor prenatal care. Of the children born of eclamptic mothers, 34.1 per cent were living mature children, 12.6 per cent were living premature children, and 36.6 per cent were stillborn. Furthermore, of the children born alive, 27 per cent died within fourteen days of birth. This study is a most valuable contribution for it brings home to physicians and patients, not only in Glasgow but everywhere else, the vast importance of prenatal care. There is no doubt whatever that proper prenatal care will materially reduce the maternal and infant death rate all over the world.

VARIATIONS IN THE FORM OF THE JAWS: With Special Reference to Their Etiology and Their Relation to the Occlusion of the Dental Arches. By J. Sim Wallace, M.D., D.Sc., L.D.S., Lecturer on Preventive Dentistry, King's College Hospital. The Cartwright Prize Essay. Cloth. Price, $6. Pp. 265, with 84 illustrations. New York: William Wood & Company, 1927.

The book, although written by a physician, deals largely with a subject that is essentially of interest to the dentist, particularly the orthodontist. The author begins his treatise with a general survey of the jaws of various races of mankind; he brings out the many variations that may take place within the limits of what is considered the normal. He devotes twenty-one chapters to a discussion of various phases of jaw development, from early man to present man, from antenatal to postnatal, maturely developed jaws. The function of the book appears to be to shed light on the causes of irregularities of the teeth, as well as caries and pyorrhea, so far as these are associated with irregularities. Following the chapters on growth and the formation of bone, the author opens the chapter on the effects of pressure and tension strains on the growth of the jaws with an error. He is correct in correlating development with function, but is at fault in his interpretation of the type of strain that is responsible for the development of the alveolar process. The effect of mastication is not a pressure strain on the process but a tension strain. The teeth are suspended by fibers that run obliquely upward toward the crest of the alveolar process. Contrary to the interpretation of the author, the effect of pressure strain from the teeth on the alveolar process is destructive rather than a constructive bony change. Throughout the book one encounters errors of observation and numerous unique interpretations. On the whole, however, the book is useful, and if studied in the proper light it will be stimulating. A great deal of credit should be given the author for diligent work.

ATLAS DE RADIOGRAPHIE OSSEUSE. I. Squelette normal. Par G. Haret, A. Dariaux, electro-radiologistes des Hôpitaux de Paris, et Jean Quénu, professeur agrégé à la Faculté de médecine des Hôpitaux de Paris. Cloth. Price, 160 francs. Pp. 129, with 123 plates. Paris: Masson & Cie, 1927.

The use of roentgenograms in diagnosis and in records is rapidly increasing in importance. Ability to interpret them accurately is of correspondingly increasing value to students and practitioners. This atlas is certain to be of great help in this work. It constitutes the first volume of a series promised by the same publishers. This volume deals with normal osteology. Other volumes will present pathologic conditions of bone, normal and pathologic conditions of the digestive tract, the respiratory apparatus and the excretory apparatus. Two of the authors, Drs. Haret and Dariaux, are roentgenologists; the third, Professor Quénu, is a surgeon. Dr. Châtellier has collaborated in the part dealing with otolaryngology. The roentgenograms are excellent. All have been made from living subjects, so that they are readily comparable with roentgenograms taken in the clinics. The different parts of the bony structures and of associated soft structures appear with clarity and definition. Roentgeno-

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grams taken from many angles are shown, and each is accompanied by a second roentgenogram identical with the other except that the outlines are drawn in clearly and reference lines and names of parts are added. This method must prove of the greatest help in the development of practical skill in interpreting roentgenograms. The volume includes sixty-five roentgenograms taken from the adult. A special set of them represents the teeth. Two represent the fetus in utero and fifty-eight represent children in various stages of development between birth and the sixteenth year. There is added a tabulation showing the centers of ossification with the dates of their appearance and of the union of the epiphyses. This table is based mainly on the roentgenographic investigation of Puyhaubert. It would be improved if separate tables were given for male and female. The marked precocity of the female in the development and growth of bone makes the separation of the sexes necessary if tables are to be definite and of the greatest value. The publishers have produced a beautiful book, well bound. Since there is no text, inability to read French will not diminish its value. It is worthy of a place in any medical library, and physicians and students of all countries will await with interest the appearance of the volumes to follow.

YOUR GROWING CHILD. A Book of Talks to Parents on Life's Needs. By H. Addington Bruce. Cloth. Price, $2.50 net. Pp. 405. New York: Funk & Wagnalls Company, 1927.

Recently child hygiene, child nutrition and child psychology have been the subjects of much discussion and investigation. There has been a need for the presentation of the newly discovered facts to parents in such form that they will be readable as well as understandable. The need is met in this book. The author believes that parents are responsible for the fate of their children in adult life. He thinks that proper shaping of the environment will assure the happiness and success of the child in later life. He points out that there are few children who must from birth be hopelessly doomed to a life of inferiority because of their heredity. Necessarily the subject matter has been condensed. This is a wide field and it could not possibly be completely covered in the space of a single volume. The author has carefully chosen and included the essentials. He has especially stressed the value for the child of training in the arts and in music. He has discussed clearly the problems of the delinquent child and so-called backward children. Here again it is emphasized that few children are born mentally defective; it is pointed out that backwardness in many instances is due only to mistakes in early training. The author shows the relation of physical defects to the mental development of the child. He discusses the care of the teeth and the eyes. There is an excellent chapter on the parental attitude during illness. This is a practical book. Parents will find much readily assimilable information that they need. What they find in it will be of incalculable aid in the rearing of their children into happy, satisfied adults.

DIE BLUTTRANSFUSION. Von Dr. E. Kuhányi, Assistent der II. chirugischen Universitätsklinik in Budapest. Mit einem Vorwort von Prof. Dr. L. v. Bakay, Direktor der II. chirurgischen Universitätsklinik in Budapest. Paper. Price, 6 marks. Pp. 127, with 30 illustrations. Berlin: Urban & Schwarzenberg, 1928.

This monograph on blood transfusion is excellent and complete. During the last ten years a great deal of work has been done and much has been written on this subject. The author has analyzed the immense literature, bringing it down to the present date, and has discussed a number of debatable points in regard to choice of method (direct or indirect, whole or modified blood), technic, indications and dangers of transfusion. This he has accomplished successfully. The book is easy to read. Its chief merits are its brevity and conciseness. Some parts of it may be too brief, particularly in the discussion of indications, where more could be said of the value of blood transfusion as a prophylactic measure in poor operative risks, long, difficult operations, and cases of jaundice. The bibliography is extensive, numerous references being made to the work of American, French and English as well as German authors. Several simple illustrative drawings are scattered through the book, adding to its value.

LA VÉSICULE BILIAIRE. Anatomie, physiologie, sémiologie, pathologie, thérapeutique. Par M. Chiray, professeur agrégé à la Faculté de médecine de Paris, et I. Pavel, assistant universitaire à la Faculté de médecine de Bucarest. Avec un exposée de radiologie vésiculaire. Par A. Lomon. Paper. Price, 70 francs. Pp. 568, with 131 illustrations. Paris: Masson & Cie, 1927.

This is an extensive collective review of bile tract diseases. The first part of the work covers the embryology, anatomy, physiology and pathology of the gallbladder. Then follow chapters on methods of examination, roentgen-ray diagnosis and cholecystography. The diagnosis of calculous and noncalculous cholecystitis is well handled. There are many illustrations, and it may be said that the text to this point is very creditably done. The chapter on treatment, however, is bad, even though the authors desire to present their subject from a medical standpoint. There is a long discussion on the now useless "medical drainage," to which the authors seem to lean kindly, and nothing of any moment concerning surgery or surgical technic is presented. An extensive bibliography is appended to each chapter.

DISEASES OF THE NOSE, THROAT AND EAR. For Practitioners and Students. Edited by A. Logan Turner, M.D., LL.D., F.R.C.S.E., Consulting Surgeon, Ear and Throat Department, Royal Infirmary, Edinburgh, and others. Second edition. Cloth. Price, $6. Pp. 440, with 234 illustrations. New York: William Wood & Company, 1927.

This is undoubtedly one of the best books for its size dealing with the subjects of the ear, nose and throat in the English language. The text is authoritative, the illustrations are numerous and excellent. The authors are internationally known. For general practitioners and for specialists this book may be unhesitatingly recommended as a model of concise and still detailed exposition of the subject.

GEWEBEZÜCHTUNG. Handbuch der Biologie der Gewebezellen in Vitro. Von Albert Fischer, wissenschaftlicher Gast der Kaiser-Wilhelm Gesellschaft. Deutsch von Fritz Demuth. Second edition. Paper. Pp. 508, with 151 illustrations. Munich: Rudolph Müller & Steinicke, 1927.

In this edition of Dr. Fischer's textbook on tissue culture, which was first published in English, many important additions have been made. Since the publication of the first edition, many new and important researches have been published, which are available to one interested in this field only after an exhaustive search of the literature. Fischer discusses nearly all of this newer work in his book, which makes it a sort of compendium of at least all the important experimental work that has been done in which tissue cultures were used. Detailed and well illustrated procedures for doing tissue culture work are described. This includes an extensive description of the careful technic that is employed and a discussion of its development. Important notes of many little pitfalls that one should guard against are included. An extensive account is given of the different kinds of culture mediums and their preparation. Particular emphasis is placed on the necessity of using pure strains of cells in carrying out almost any kind of tissue culture work. A large part of the book deals with the author's own researches, which are made an integral part of it. Some of these deal with the growth of the Rous chicken sarcoma, and the behavior of the virus when propagated with the cells in tissue culture. Methods are also described for growing pure strains of mouse carcinoma in vitro. The more important physiochemical investigations that have been made recently on tissue cells in vitro are carefully described. Many of these are the experiments of the author and his colleagues. This is undoubtedly the best book of its kind to be found anywhere, for it has a complete index, a bibliography of more than 1,200 references pertaining to the work, and excellent illustrations of the more important methods used.

PSYCHIATRIE. Von Prof. Dr. Emil Kraepelin, und Prof. Dr. Johannes Lange. Band I. Allgemeine Psychiatrie. Von Prof. Dr. Johannes Lange. Ninth edition. Paper. Price, 54 marks. Pp. 954, with 44 illustrations. Leipsic: Johann Ambrosius Barth, 1927.

This edition is even better than the earlier versions. It is enhanced by new material and more detailed discussions. This work is by far the best complete textbook of psychiatry and will long remain the standard. It should be available to all students of the subject.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

HANDBUCH DER NORMALEN UND PATHOLOGISCHEN PHYSIOLOGIE MIT BERÜCKSICHTIGUNG DER EXPERIMENTELLEN PHARMAKOLOGIE. Herausgegeben von A. Bethe, G. v. Bergmann, G. Embden, und A. Ellinger. Band VII, 2 Hälfte. Blutzirkulation.—2 Teil. Blutgefässe. Kreislauf. Von E. Atzler, L. Brauer und anderen. Paper. Price, 88 marks. Pp. 865-1923. Berlin: Julius Springer, 1927.

Another tremendous volume in the world's greatest system of physiology.

MODERN BAKING POWDER: An Effective, Healthful, Leavening Agent, Including the Occurrence of Aluminum Compounds in Foods and Their Effect on Health. Compiled by Juanita E. Darrah, A.B., M.S., A.M. Distributed by the Research Department of Calumet Baking Powder Company, Chicago. Cloth. Price, $1 net. Pp. 125, with illustrations. Chicago: Commonwealth Press, Inc., 1927.

Part of the great war between the armies of alum and tartrates.

LABORATORY MANUAL FOR THE DETECTION OF POISONS AND POWERFUL DRUGS. By Dr. Wilhelm Autenrieth, Professor in the University of Freiburg I. B. Authorized translation by William H. Warren, Ph.D., Professor of Organic Chemistry in Clark University. Sixth edition translated from fifth German edition. Cloth. Price, $6. Pp. 698, with 60 illustrations. Philadelphia: P. Blakiston's Son & Company, 1928.

New edition of a standard text on toxicology.

THE PEAKS OF MEDICAL HISTORY. An Outline of the Evolution of Medicine for the Use of Medical Students and Practitioners. By Charles L. Dana, A.M., M.D., LL.D., Professor of Nervous Diseases, Cornell University Medical College. Second edition. Cloth. Price, $3. Pp. 105, with 59 illustrations. New York: Paul B. Hoeber, Inc., 1928.

Second edition of Dr. Dana's brief and stimulating contribution to the essentials of medical history.

KURZER LEITFADEN DER PHOTOCHEMIE IM DIENSTE DER MEDIZIN, INSBESONDERE DER LICHTTHERAPIE UND PHOTOPHYSIOLOGIE. Von Prof. Dr. phil. et. chem. J. Plotnikow, Direktor des phys.-chem. Institutes an der technischen Fakultät der Universität Zagreb. Paper. Price, 7.50 marks. Pp. 186, with 40 illustrations. Leipsic: Georg Thieme, 1928.

More accumulation of material on light—its physiologic effects and its uses in therapy.

ELEMENTS OF PHYSIOLOGY. For Students of Medicine and Advanced Biology. By Ernest G. Martin, Ph.D., Professor of Physiology in Stanford University, and Frank W. Weymouth, Ph.D., Associate Professor of Physiology in Stanford University. Cloth. Price, $8 net. Pp. 784, with 133 illustrations. Philadelphia: Lea & Febiger, 1928.

A new text in a field already well supplied—extensive review will appear later.

TASCHENBUCH DER THERAPIE MIT BESONDERER BERÜCKSICHTIGUNG DER THERAPIE AN DEN BERLINER, WIENER U. A. DEUTSCHEN KLINIKEN. Herausgegeben von Medizinalrat Dr. M. T. Schnirer. Twenty-Fourth edition. Cloth. Price, 4.40 marks. Pp. 536. Leipsic: Curt Kabitzsch, 1928.

An index to treatment of little value to American readers.

THE EXAMINATION OF THE CENTRAL NERVOUS SYSTEM. By Donald Core, M.D., F.R.C.P., Honorary Assistant Physician, the Manchester Royal Infirmary. Cloth. Price, $3.50. Pp. 248, with 13 illustrations. New York: William Wood & Company, 1928.

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New edition of a popular work on the physiology of diet and nutrition.

PHYSICAL DIAGNOSIS. By Charles Phillips Emerson, A.B., M.D., Professor of Medicine, Indiana University School of Medicine. Cloth. Price, $7. Pp. 553, with 324 illustrations. Philadelphia: J. B. Lippincott Company, 1928.

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LES BASES PHYSIQUES DE LA RADIOTHÉRAPIE. Par Jean Dubost, moniteur de physique médicale à la Faculté de médecine de Paris. Paper. Pp. 99, with 50 illustrations. Paris: Gauthier-Villars & Cie, 1928.

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LES TROUBLES FONCTIONNELS DE L'APPAREIL GÉNITAL DE LA FEMME. Étude physiologique, clinique et thérapeutique. Par Gaston Cotte, professeur agrégé à la Faculté de médecine de Lyon. Paper. Price, 60 francs. Pp. 570, with 117 illustrations. Paris: Masson & Cie, 1928.

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CRAWFORD W. LONG AND THE DISCOVERY OF ETHER ANESTHESIA. By Frances Long Taylor. With a foreword by Francis R. Packard, M.D. Cloth. Price, $4. Pp. 237, with 9 illustrations. New York: Paul B. Hoeber, Inc., 1928.

Long's side of this ever fascinating story.

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Miscellany

HAS PROHIBITION IMPROVED PUBLIC HEALTH?

Louis I. Dublin (*Am. J. Pub. Health* **18**:1 [Jan.] 1928) has analyzed two groups of mortality data for the twenty-six year period 1900 to 1926, and those of a large area of the country, known as the U. S. Death Registration Area, as constituted in 1900. These are the six New England states, New York, New Jersey, Michigan and Indiana. Together, these ten states contain 26.1 per cent of the total population of the country. Records of mortality have been kept with great accuracy in this area for the entire period since 1900. These states, moreover, are fairly representative of the country as a whole. While their people live chiefly in urban industrial areas, they have also a fair proportion of rural residents; namely, 25 per cent. The second group is composed of millions of men, women and children, who are insured in the Metropolitan Life Insurance Company and whose mortality experience it has been possible to follow very closely since 1911. He contrasts the trends of population mortality for both groups in two periods, that from 1900 to 1917, inclusive, with that from 1921 to 1926, inclusive. It is shown that the level of mortality in the prohibition years has been clearly lower than in the earlier years, both in the general population and among the insured. In the general population the average death rate between 1921 and 1926 was 16.9 per cent lower than in the earlier period. Among the industrial policyholders, the average death rate was 26.2 per cent lower in the prohibition period than in the earlier one. The improvement in mortality during the period between 1921 and 1926 was entirely limited to the group of white females.

As to age, the prohibition period is characterized by sharply declining mortality rates among children and adolescents of both sexes; and this decline is characteristic of a number of additional age periods among women. The improvement is retarded among young male adults, and disappears altogether during the middle years of life in that sex. In fact, the mortality has definitely risen among men after age 35. Social workers are virtually in accord that the years since 1920 have seen an improvement in the economic condition of the homes of the great mass of American people. Never before have savings deposits been so great or have life insurance policies been added to and maintained as during the last six years. Retail trade has never experienced such prosperity. All of this emphasizes what is universally observed; namely, that the housewife now has more money to spend on the necessities of the household, on food, on clothing, and on shelter to a degree that has never before been possible for so many.

During this prohibition period there has been a constant rise in the death rate from alcoholism and from the associated condition of cirrhosis of the liver. Both of these diseases were at a minimum in 1920. They are now at a point almost as high as in the decade prior to prohibition. Beginning with 1920 there has been a continuous and marked rise in the number of deaths resulting from the use of alcohol. In 1920 the death rate from this condition reached its minimum, 1.3 per hundred thousand. Every year since then, virtually without exception, has seen a rise and the rate is now more than three times as high as it was only six years ago. In Maryland the alcoholism death rate in 1926 was the highest ever recorded since 1911. In Rhode Island, Michigan and New York the 1926 rate was the highest with a few exceptions. The records of hospitals for the insane tell a similar story. The year 1920 showed the lowest rate for admissions to hospitals for mental disease due to alcoholism. Since that year the admission rate has increased step by step and last year saw conditions three times as bad as six years ago.

In the country over, with very few exceptions, there is a mounting rate from alcoholism and from the associated diseases among the male population. This situation is in striking contrast with what has occurred in neighboring Canada. In the Dominion, likewise, several provinces have been experimenting with one form or another of regulatory legislation. But in that country there is as yet no evidence of any untoward result in the mortality rates for any large group of the population.

The experience of the Metropolitan Life Insurance Company in Canada is especially instructive. Among more than 1,000,000 policyholders there have been recorded only 100 deaths from alcoholism and acute alcoholic poisoning during the entire period 1911 to 1926. The deaths from alcoholism have gone down during the last ten years in Canada—a condition very different from that in the United States. Much more important than the deaths from alcohol are the deaths from the degenerative diseases such as heart diseases, kidney disease and pneumonia, which are apparently on the rise. Just how far the indulgence in alcohol will explain these increases, it is impossible to say. But in any case there is no indication as yet of a tendency toward improvement in these among American men. The effect of the prohibition legislation on the public health has clearly not been uniform among the various groups of the American population. Absolute prohibition prevails hardly anywhere and affects as yet only small numbers of people. The effect of the prohibition situation on the public health has probably been good where there has been prohibition to an appreciable degree, and the situation has been unsatisfactory to the degree in which there has in fact been no prohibition. Especially is this true in those areas of the country and among those classes of the people where there has been drinking of the highly deleterious stuff that passes for alcoholic beverages these days. Such a conclusion is at once consistent with the facts at our disposal and squares with what has generally been accepted as the true relation existing between heavy alcoholic indulgence and individual health.

REPORT ON HEALTH OF HAITI

The annual report of the sanitary engineer of the republic of Haiti for the fiscal year 1925-1926 has been received. There are areas of rich soil in Haiti which are rendered almost valueless on account of the presence of malaria. *Anopheles albimanus*, which is the only efficient mosquito host in the island, will transmit all three species of the plasmodium. It breeds all over the island where collections of water occur. The wettest city is Cayes, with a rainfall of more than 80 inches. The place of least rainfall is Mole St. Nicolas, at the extreme end of the northwest peninsula, with 21 7/10 inches. There are rural places where the rainfall averages 106 inches. Some of the cities are making progress in mosquito control, but there are many sections in Haiti where, for years, the only measure that can be applied will be the administration of quinine. Small towns are sometimes built in the center of swampy areas. Examination of school children shows in some sections a malaria index of from 50 to 60 per cent. Effective work has been done in Port au Prince by draining or oiling pools, clearing away vegetation, filling up swamps and laying permanent drains. These measures have been used in some smaller communities. Dogs are so numerous in Haiti that a law has been passed dealing with their registration and control. In the year covered by this report, three persons died of rabies. There was not a case of smallpox in the island during the year; vaccination campaigns were carried on. The total capacity of the hospitals in Haiti is 1,120; two of them have roentgenray laboratories; each one has an operating room. At the Haitian General Hospital, Port au Prince, as many as sixty-eight major operations have been performed in a month; the eye, ear, nose and throat department of this hospital extends its services throughout the republic, particular attention being given to operations for cataracts. A rural clinical service has been developed with this hospital as a center through which the poor receive medical care at regular intervals. The report says that the public health service has staked its future on the successful carrying out of this plan of taking modern medicine out into the bushes and up the mountain sides. The numerical registration of deaths in the republic is a failure, it is said, because most of the people in the rural districts die without medical attention. The cause is commonly given as headache, liver trouble, pain, fever and the like, representing,

of course, the opinion of a friend or relative. A beginning has been made to have a vital statistics law passed based on the regulations of the U. S. Census Bureau. The public health service of the island has plans to improve sanitation, many of which, it would seem, will be difficult or impossible to carry out for years to come. Port au Prince has no water carriage sewerage system. The reason given is a lack of funds. The report makes a rather large volume. There are many other things mentioned of considerable importance and interest.

Medicolegal

Showing Physician as Frequently an Expert Witness

(Murero v. Reinhart Lumber Co. et al. (Calif.), 259 Pac. R. 494)

The District Court of Appeal of California, first district, division 2, says that in this action to recover damages for personal injuries the plaintiff contended that the trial court erred in limiting her on her cross-examination of a physician who was a witness tendered by the defendants. In this connection the record disclosed that on cross-examination the plaintiff attempted to prove that the physician had been frequently called as an expert witness on questions of medical jurisprudence. She stated that in entering on that line of proof she expected to show the physician's interest. The trial court informed her that she was entirely at liberty to make any showing to place before the jury the interest of the witness. However, the trial court ruled that a showing that the physician had frequently been called as an expert witness was not evidence showing, or tending to show, his interest. The ruling was clearly correct. The evidence tendered would be material as fortifying the qualifications of the witness and thus strengthening the case for the defendants and disproving the case which the plaintiff was attempting to introduce. The plaintiff was not prejudiced by its rejection.

Procedure to Compel Physicians to Make Disclosures

(Metropolitan Life Ins. Co. v. Boddie et al. (N. C.), 139 S. E. R. 228)

The Supreme Court of North Carolina, in granting the defendants a new trial after the plaintiff had recovered a judgment in this action to compel the cancelation of a life insurance policy for alleged false representations contained in the application dated May 29, 1923, says that a physician was introduced as a witness for the plaintiff and stated that he knew the insured and was his family physician since 1919. The defendants (widow and administrator of the insured) objected, and the objection was overruled. The testimony of the physician was offered for the purpose of showing that the statements and representations as contained in the application were untrue. Section 1798 of the compiled statutes of North Carolina provides:

> *Communications Between Physician and Patient.*—No person, duly authorized to practice physic or surgery shall be required to disclose any information which he may have acquired in attending a patient in a professional character, and which information was necessary to enable him to prescribe for such patient as a physician, or to do any act for him as a surgeon: Provided, that the presiding judge of a superior court may compel such disclosure, if in his opinion the same is necessary to a proper administration of justice.

The serious question presented was, Was the exception and assignment of error of the defendants sufficient to permit the defendants in this court to take advantage of the proviso of the statute, or was it waived? This court holds that the exception was sufficient, the matter was not waived, and the assignment of error should be sustained.

At common law no privilege existed as to the confidential relations between physician and patient. In its wisdom the general assembly of this state has seen fit to pass the statute quoted. This court thinks that in construing it it was incumbent on the presiding judge to find the fact, and this should appear in the record, in substance, that in his opinion the disclosure was necessary to a proper administration of justice. Under the statute, the evidence was incompetent unless in his opinion it was necessary to a proper administration of justice. The disclosures of a physician as to what takes place between him and his patients had from time immemorial been held by the medical profession as inviolate. In the Principles of Medical Ethics, adopted by the American Medical Association at the annual session in New Orleans in May, 1903, among the duties of physicians to their patients are the following:

> SEC. 2.—Every patient committed to the charge of a physician should be treated with attention and humanity, and reasonable indulgence should be granted to the caprices of the sick. Secrecy and delicacy should be strictly observed; and the familiar and confidential intercourse to which physicians are admitted, in their professional visits, should be guarded with the most scrupulous fidelity and honor.
>
> SEC. 3.—The obligation of secrecy extends beyond the period of professional services; none of the privacies of individual or domestic life, no infirmity or disposition, or flaw of character observed during medical attendance should ever be divulged by physicians, except when imperatively required by the laws of the state. The force of the obligation of secrecy is so great that physicians have been protected in its observance by courts of justice.

A physician should not be subpenaed to court and compelled to make disclosures and open the door to the confidential relationship unless required to do so in the manner provided by the statute. This court thinks this is fair to the physician and a right interpretation of the statute. This finding of record should be afforded the physician to protect him from criticism and, no doubt, loss of prestige and practice, if his patient objects to his testifying.

Physician's Correspondence Sufficient Proof of Injury

(Wenstrom v. Aetna Life Ins. Co. (N. D.), 215 N. W. R. 93)

The Supreme Court of North Dakota, in affirming a judgment in favor of the plaintiff on an insurance policy, says that the defendant contended that it was error to permit recovery for total and permanent disability contrary to the terms of the policy which prescribed that such benefits did not accrue until six months after proof of such disability was received at the home office of the company. But the term "proof" as used in that connection did not mean absolute conclusive proof of permanent disability of the insured. It meant some evidence or notice to the company that the insured had been injured, and the company then had six months to investigate and determine whether or not the disability was permanent within the meaning of the policy. If the proof furnished must be conclusive, the company would not need time for investigation but could commence paying the indemnity at once; and it follows that on any notice to the company of a permanent injury to the insured, it is the duty of the company to begin its investigation at once so that the insured may have the indemnity if he is entitled to it under the policy. When the record shows that the physician who attended the insured, after an accident, corresponded with the insurance company, and reported the condition of the insured to the company, such correspondence and reports are sufficient proof of injury to the insurance company.

Compensable Contraction of Typhoid in Foreign Land

(Fidelity & Casualty Co. v. Industrial Acc. Commission (Calif.), 258 Pac. R. 698)

The District Court of Appeal of California, first district, division 1, affirms an award of compensation made by the industrial accident commission for the death of an employee who was sent by his employers from San Francisco to Valparaiso, Chile, to represent them at a nitrate conference to be held in the latter city, and to visit various concerns in South America with which his employers were interested in a business way. He left San Francisco, June 12, 1926, stopping at several places en route to Valparaiso, where he arrived, July 8, and remained until July 18. He then visited several places and ports where nitrate is produced and shipped, arriving at Illa, July 25, where he showed signs of illness, and at Arequipa, Peru, July 27, at which place he was taken to a hospital, where his death occurred, August 11. According to the diagnosis of physicians by whom he was treated, his death was caused by typhoid. It was found by the commission that the employee sustained an injury arising out of and in the course of his employment, namely, the con-

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traction of the disease mentioned, which was the proximate cause of his death.

The testimony showed that one of the employers at least was familiar with health conditions in Chile and Peru, and that through him the employee was warned of the danger of contracting the disease and advised as to the precautions to be taken to avoid it. It further appeared that the disease, while not epidemic in the places visited, was prevalent there and, owing to sanitary conditions, a constant source of danger. It was clear from the testimony that the employers were aware of the danger and that the employee, during the period which elapsed between the arrival at Valparaiso and the date he reached Arequipa, was engaged in performing the duties of his employment, and the evidence reasonably supported the conclusion that the disease was contracted during that period.

While an employee who contracts a contagious disease has the burden of showing affirmatively that he was subjected to an exposure in excess of that of the commonalty and in the absence of such showing his illness or death cannot be said to have been proximately caused by an injury arising out of his employment, the question is one of fact for the commission, and its finding thereon if reasonably supported cannot be disturbed. In this case the evidence sufficiently showed that the inhabitants of these localities, while not immune from the disease, were less subject to infection therefrom than foreigners, and this court is unable to say that the conclusion of the commission that the employee was subjected to an exposure in excess of that of the commonalty was not reasonably supported.

Comment on Instruction Relative to Expert Testimony

(Spencer v. Quincy, O. & K. C. R. Co. (Mo.), 297 S. W. R. 353)

The Supreme Court of Missouri, division 1, says that, in this action to recover damages for personal injuries, at the request of the plaintiff the following instruction was given:

An expert witness is one who is skilled in any particular art, trade or profession, being possessed of peculiar knowledge concerning the same acquired by study, observation and practice. Expert testimony is the opinion of such witness, based upon the facts in the case as shown by the evidence, but it does not even tend to prove any fact upon which it is based, and before you can give any weight whatever to the opinion of expert witnesses you must first find from the evidence that the facts upon which it is based are true. The jury is not bound by expert testimony, but it may be considered by you in connection with the other evidence in the case.

This instruction was taken bodily from *Smith* v. *Telephone Co.*, 113 Mo. App. 443, 87 S. W. 71, wherein it had the unqualified approval of the Kansas City Court of Appeals. Nevertheless, it was erroneous, at least as applicable to the evidence in this case. There were some five or six medical experts who testified with respect to the plaintiff's injuries —torn or strained ligaments and fractured bones at or just above the ankle joint. They had made physical examinations and they had "read" roentgen-ray pictures, and from both had diagnosed the conditions of the injured parts. Their testimony consisted of a mixture of the facts they had observed and the inferences they had drawn from those facts. Neither a skilled lawyer nor a trained psychologist, much less a jury of laymen, could have separated with any sort of precision the fact testimony of these experts from their opinion testimony. The first part of the instruction could very properly have been given if the experts' opinions had been based solely on hypothetic facts; but the propriety of giving in any case the direction embodied in the last sentence is extremely doubtful. The opinion of an expert, when admissible at all, is evidence; sometimes it is the only evidence by which proof can be made, and its value as evidence is always for the jury. Besides, what reason can there be for singling out the testimony of experts for comment and caution when their testimony must be considered and weighed just like the testimony of other witnesses?

But all the foregoing is merely by the way. A similar instruction was given at the request of the defendant. The error being common to the two parties, the defendant was not in a position to complain of it.

The assessment of the plaintiff's damages at $41,375 was most extraordinary, to say the least. There was no suggestion at the trial that the pain and inconvenience might to some extent be overcome by the use of an artificial brace or support. But in any event a leg with a weak or impaired ankle is better than no leg at all, and $10,000 is held the maximum recovery permissible in this case.

Using Lane Plate Before Having Tried Buck's Extension

(Sweet vs. Douge (Wash.), 259 Pac. R. 25)

The Supreme Court of Washington says that the plaintiff sought in this action to recover compensation for treatment rendered by him in his hospital to the defendant who, December 21, broke the femur of his right thigh and was immediately taken to the plaintiff's hospital. The defendant answered that the treatment of his leg had been so negligently and unskilfully performed that he was damaged thereby, and asked judgment accordingly. The result was a verdict and judgment denying to the plaintiff any recovery and awarding to the defendant recovery against the plaintiff of $1,500.

When the defendant was taken to the plaintiff's hospital the plaintiff, with the aid of an associate physician and surgeon, undertook to set the broken bone and treat the injured leg. By outward manipulation they attempted to bring the two broken ends of the bone in apposition and alinement but were by that method unable to do so and securely fix them in place. A second similar attempt at setting the broken bone and holding it in place was made during the next few days. According to the testimony of the defendant and one other witness, no continuous extension process was applied looking to holding the broken parts in apposition and alinement prior to December 29; that is, no Buck's extension or similar process was used prior to that date. The oblique course of the break was readily discernible by roentgenograms, and hence the manifest necessity of using some such method of extension. December 29, without having used any extension process whatever, the plaintiff and his associate cut into the flesh of the thigh, placed the broken ends of the bone in apposition and alinement, and secured them in that position by means of a Lane plate. Serious infection appeared soon thereafter, causing the defendant to be necessarily confined to the hospital for treatment of such infection for a period of six months, and even then on his leaving the hospital the dire results of such infection were far from being removed.

At this court views this case, it was not confronted in its present inquiry with the question of discretion on the part of an attending physician or surgeon in adopting one of two or more recognized methods of treatment, but the inquiry was as to whether or not the evidence warranted the jurors in finding, as they manifestly did find, that no extension process was used in the treatment of the injury prior to opening the flesh and inserting the Lane plate. The evidence was ample to warrant the conclusion that the opening of the flesh, the injury thereto being wholly internal, and the insertion of a Lane plate with a view of holding the ends of a broken bone in apposition and alinement, is a method of last resort; so recognized by the profession generally because of the danger of infection following such method of treatment. The evidence also warranted the conclusion that in a fracture of the nature here in question the profession universally recognizes the necessity of some extension process—that of the Buck's extension or some similar process—as the one effective method of holding the broken ends in apposition and alinement to give them opportunity for healing and growth together.

The testimony given on the trial of this case was quite voluminous. This court has painstakingly reviewed every word of it as it was fairly and in much detail abstracted by counsel for the plaintiff. But the case, in its last analysis, as the court views it, presented only the question of fact as to whether or not the plaintiff used any extension process in the treatment of the defendant's broken leg prior to the opening of the flesh of the thigh and the insertion of the Lane plate. The jury manifestly found that no such process was used prior to the opening of the flesh and the insertion of the Lane plate. The jury also manifestly found that, had

some such extension process been employed by the plaintiff and his associate, there would almost certainly have been no necessity for the opening of the flesh of the thigh and the insertion of the Lane plate, from which the defendant's great affliction followed. This court cannot see its way clear to disturb the verdict and judgment, and the judgment is affirmed.

Evidence of State of Mind and Suicide of Relatives

(State v. Warren (Mo.), 297 S. W. R. 397)

The Supreme Court of Missouri, division 2, says in this homicide case, in which the defense was insanity, that the testimony of certain lay witnesses as to their opinions of the real or actual state of mind of the defendant clearly was not proper. The court does not know of any authority supporting the admissibility of opinion evidence as to the actual state of mind of another person. It was proper to show the opinion of the witnesses, based on the appearance and conduct of the defendant. Such testimony properly went to the apparent state of mind of the defendant. The court should be careful not to strike out or refuse to admit any testimony which can be said to have any legitimate tendency to throw light on the defendant's state of mind; especially testimony tending to show conduct on his part which was unusual and eccentric.

The mere fact that blood relatives of the defendant committed suicide, standing alone, is not sufficient to prove the insanity of the particular relative at the time of such suicide. In the absence of proof of other facts tending to show that the particular blood relative was insane, this court does not think that the trial court erred in excluding either the formal certificates of death (if they had otherwise been admissible in evidence) or other proof offered tending to show only the fact of such deaths by suicide. Proof of the suicide of blood relatives, when properly made, in connection with other facts having a tendency to show the insanity of such blood relatives, is proper evidence in establishing the fact of the insanity of the defendant. He should be permitted to show, if he can, that blood relatives were insane and committed suicide as a circumstance, in connection with other proof on that subject, tending to show his own insanity at the time of the homicide for which he is on trial. However, proof of the insanity of collateral relatives is expressly held inadmissible in Missouri. Proof of the suicide of a collateral relative, together with other facts tending to show the insanity of such relative, certainly would not be admissible as bearing on the insanity of the defendant in the absence of proof tending to show that such insanity was inherited from an ancestor which the defendant and such collateral relative had in common.

Admissible Question and Weight to Be Given Opinions

(Scheipers v. Missouri Pac. R. Co. (Mo.), 298 S. W. R. 51)

The Supreme Court of Missouri, division 2, says, in this action to recover damages for personal injuries, that a physician witness was asked whether, basing his opinion on the facts stated in a hypothetical question and on his examination of the plaintiff, the condition of the plaintiff "may be permanent." This court finds no merit in the objection that the hypothetical question called for an answer which invaded the province of the jury.

An instruction which the trial court gave the jury was:

> The court instructs you that opinions of expert witnesses who have testified before you, though proper for your consideration and entitled to receive at your hands all that weight which reasonably and justly belongs to them, are nevertheless not binding on you against your own judgment, but should be weighed, and, especially so where they differ, and should be compared by you, and such effect allowed by you to them as you think right, remembering that on you alone rests the responsibility of a correct verdict.

The criticism made of this instruction by the defendant was that the jurors should weigh testimony of expert witnesses in the light of all the other facts and circumstances in evidence. No cases were cited in support of such criticism. The jurors were told that such testimony was not binding on them against their judgment; that is, that they did not have to believe such testimony, if deemed unreasonable. Such was the meat of the instruction. This court fails to discover error in it.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Birmingham, April 17-20. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.

American Association for Thoracic Surgery, Washington, D. C., April 30-May 2. Dr. Ethan Flagg Butler, Sayre, Pa., Secretary.

American Association of Anatomists, Ann Arbor, Mich., April 5-7. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

American Association of Genito-Urinary Surgeons, Washington, D. C., April 30-May 2. Dr. H. L. Kretschmer, 122 S. Michigan Avenue, Chicago, Secretary.

American Association of Pathologists and Bacteriologists, Washington, D. C., May 1-2. Dr. H. T. Karsner, 2109 Adelbert Road, Cleveland, Secretary.

American Bronchoscopic Society, Washington, D. C., April 30. Dr. Louis H. Clerf, 128 South 10th Street, Philadelphia, Secretary.

American Climatological and Clinical Association, Washington, D. C., May 1-2. Dr. A. K. Stone, Auburn Street, Framingham Center, Mass., Secretary.

American Dermatological Association, Washington, D. C. April 30-May 2. Dr. C. Guy Lane, 416 Marlborough Street, Boston, Secretary.

American Gastro-Enterological Association, Washington, D. C., April 30-May 1. Dr. W. J. Mallory, 1720 Connecticut Avenue, N. W., Washington, D. C., Secretary.

American Gynecological Society, Washington, D. C., April 30-May 2. Dr. Floyd E. Keene, Medical Arts Building, Philadelphia, Secretary.

American Laryngological Association, Washington, D. C., May 1-3. Dr. G. M. Coates, 1721 Pine Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Washington, D. C., May 3-5. Dr. R. L. Loughran, 33 East 63d Street, New York, Secretary.

American Neurological Association, Washington, D. C., May 1-3. Dr. Henry A. Riley, 870 Madison Avenue, New York, Secretary.

American Ophthalmological Society, Washington, D. C., April 30-May 2. Dr. Emory Hill, Professional Building, Richmond, Va., Secretary.

American Otological Society, Washington, D. C., April 30-May 1. Dr. T. J. Harris, 194 East 40th Street, New York, Secretary.

American Pediatric Society, Washington, D. C., April 30-May 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Pharmacological Society, Ann Arbor, Mich., April 12-14. Dr. E. D. Brown, University of Minnesota, Minneapolis, Secretary.

American Physiological Society, Ann Arbor, Mich., April 12-14. Dr. W. J. Meek, Science Hall, University of Wisconsin, Madison, Secretary.

American Society of Biological Chemistry, Ann Arbor, Mich., April 12-14. Dr. D. W. Wilson, University of Pennsylvania Medical School, Philadelphia, Secretary.

American Society of Clinical Investigation, Washington, D. C., April 30. Dr. J. T. Wearn, Boston City Hospital, Boston, Secretary.

American Society of Tropical Medicine, Washington, D. C., May 1-2. Dr. Benjamin Schwartz, P. O. Box 131, Pennsylvania Avenue Station, Washington, D. C., Secretary.

American Surgical Association, Washington, D. C., April 30-May 2. Dr. Lincoln Davis, 205 Beacon Street, Boston, Secretary.

Arizona State Medical Association, Tucson, April 19-21. Dr. D. F. Harbridge, Goodrich Building, Phoenix, Secretary.

Arkansas Medical Society, El Dorado, May 1-3. Dr. W. R. Bathurst, 810 Boyle Building, Little Rock, Secretary.

Association of American Physicians, Washington, D. C., May 1-3. Dr. J. H. Means, Massachusetts General Hospital, Boston, Secretary.

California Medical Association, Sacramento, April 30-May 3. Dr. Emma W. Pope, 593 Market Street, San Francisco, Secretary.

Congress of Physicians and Surgeons of North America, Washington, D. C., May 1-2. Dr. W. R. Steiner, 646 Asylum Avenue, Hartford, Conn., Secretary.

Connecticut State Medical Society, Bridgeport, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Federation of American Societies for Experimental Biology, Ann Arbor, Mich., April 12-14. Dr. E. D. Brown, University of Minnesota, Minneapolis, Secretary.

Florida Medical Association, Tampa, April 3-4. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.

Georgia, Medical Association of, Savannah, May 9-11. Dr. A. H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.

Illinois State Medical Society, Chicago, May 8-11. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.

Iowa State Medical Society, Cedar Rapids, May 9-11. Dr. Tom B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Wichita, May 8-10. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.

Louisiana State Medical Society, Baton Rouge, April 10-12. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. John T. King, Jr., 1211 Cathedral Street, Baltimore, Secretary.

Mississippi State Medical Association, Meridian, May 8-10. Dr. T. M. Dye, Clarksdale, Secretary.

Missouri State Medical Association, Columbia, May 14-17. Dr. E. J. Goodwin, 634 N. Grand Boulevard, St. Louis, Secretary.

Nebraska State Medical Association, Hastings, May 15-17. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.

New Hampshire Medical Society, Manchester, May 15-16. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

New Mexico Medical Society, Albuquerque, May 10-11. Dr. L. B. Cohenour, 219 West Central Avenue, Albuquerque, Secretary.

New York, Medical Society of the State of, Albany, May 21-24. Dr. D. S. Dougherty, 2 East 103d Street, New York, Secretary.

North Carolina, Medical Society of the State of, Pinehurst, April 30-May 2. Dr. L. B. McBrayer, Southern Pines, Secretary.

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North Dakota State Medical Association, Devils Lake, May 23-24. Dr. J. G. Lamont, San Haven, Secretary.
Ohio State Medical Association, Cincinnati, May 1-3. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.
Oklahoma State Medical Association, Tulsa, May 17-19. Dr. C. A. Thompson, 609 Barnes Building, Muskogee, Secretary.
Pacific Coast Oto-Ophthalmological Society, Santa Barbara, April 18-20. Dr. Walter F. Hoffman, 817 Summit Avenue, Seattle, Secretary.
South Carolina Medical Association, Columbia, April 17-19. Dr. E. A. Hines, Seneca, Secretary.
Tennessee State Medical Association, Nashville, April 10-12. Dr. H. H. Shoulders, Lambuth Building, Nashville, Secretary.
Texas, State Medical Association of, Galveston, May 8-10. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.
West Virginia State Medical Association, Fairmont, May 21-24. Mr. Joe W. Savage, 303 Professional Bldg., Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American J. Medical Sciences, Philadelphia

175: 153-300 (Feb.) 1928

*Yeastlike Fungi in Gastro-Intestinal Tract in Pernicious Anemia, in Other Diseases and in Normal Individuals. R. N. Nye, L. G. Zerfas and M. A. Cornwell, Boston.—p. 153.
*Bronchography: Introduction of Iodized Oil into Tracheobronchial Tree by "Passive" Method. A. Ochsner and W. Nesbit, Madison, Wis.—p. 175.
*Cataract and Postoperative Tetany. L. Jacques, Chicago.—p. 185.
*Synthalin in Treatment of Diabetes Mellitus. G. G. Duncan, Philadelphia.—p. 196.
*Sickle-Cell (Drepanocytic) Anemia: Second Case Successfully Treated by Splenectomy. E. V. Hahn, Indianapolis.—p. 206.
*Heredity in Hemophilia. M. T. Macklin, London, Ont.—p. 218.
*Pneumonia in Case of Chronic Lymphatic Leukemia. R. A. Hickling and W. D. Sutliff, New York.—p. 224.
*Basal Metabolism in Chronic Lymphatic Leukemia. C. I. Krantz and M. C. Riddle, Boston.—p. 229.
*Primitive Human Hearts: Cor "Biloculare" and Triloculare. R. H. Wood and G. A. Williams, Atlanta, Ga.—p. 242.
*Electrocardiographic Changes During Attacks of Angina Pectoris. H. Feil and M. L. Siegel, Cleveland.—p. 255.
Therapeutic Mechanism of Malaria Treatment of General Paralysis. W. H. Goeckerman, Rochester, Minn.—p. 261.
*Effect of One Hundred Injections of Tryparsamide on Spinal Fluid in General Paralysis. H. A. Bunker, Jr., New York.—p. 265.

Yeastlike Fungi in Gastro-Intestinal Tract in Pernicious Anemia.—Seventy-eight strains of yeastlike fungi were isolated in pure culture by Nye et al. from 192 stools from 121 individuals, and thirty-one gastric contents from twenty-nine individuals, all with a variety of diseases. By far the majority of these strains, on the basis of similarity of morphologic and cultural characteristics, have been placed in the single species group *Parasaccharomyces* A. The members of this large group cannot be distinguished from named strains of *Monilia psilosis* or from yeastlike fungi isolated from typical thrush membranes or sputum and are apparently of common occurrence in the human gastro-intestinal tract. The two outstanding features of the correlation of cultural and clinical data are: (*a*) a higher incidence of yeastlike fungi in the gastric contents from patients with gastric achylia, and (*b*) the failure to isolate species groups, other than *Parasaccharomyces* A, in appreciable numbers from the stools. The percentage isolations of *Parasaccharomyces* A from the stools and gastric contents in pernicious anemia were no greater than those in cases with severe anemia and gastric achylia other than pernicious anemia. On the basis of these observations it seems likely that *Monilia psilosis* is unimportant as an etiologic factor, not only in pernicious anemia, but also in sprue.

Bronchoscopy: Use of Iodized Oil.—Ochsner and Nesbit urge that contrast substances such as iodized oil should be introduced into the tracheobronchial tree under the fluoroscope and observed fluoroscopically. The "passive" introduction of these substances especially favors fluoroscopic observation. Bronchography is especially indicated in those cases presenting chronic pulmonary symptoms and should not be denied a patient who is suspected of having tuberculosis. In a series of more than 700 cases no untoward signs or symptoms have been observed following a bronchography obtained by the "passive" introduction of contrast substances into the tracheobronchial tree. The introduction of iodized oil into the tracheobronchial tree has a decided therapeutic effect in cases of chronic pulmonary infections.

Cataract and Postoperative Tetany.—Two cases of bilateral cataract developing in the course of postoperative tetany are recorded by Jacques. In one case there was a marked alopecia of the scalp hair. Attention is called to the relatively frequent occurrence of lens, hair and nail changes, not only in postoperative tetany but also in the so-called spontaneous forms of the disease. Thirty-four cases of postoperative tetany cataract collected from the literature are briefly tabulated. The necessity for prompt and adequate control of postoperative tetany to avoid such complications is emphasized. In one case, the administration of parathyroid extract-Collip had failed to arrest the progress of the cataracts.

Synthalin in Treatment of Diabetes Mellitus.—Duncan suggests giving conservative doses of synthalin. Ten milligrams, three times daily before meals, for two successive days, omitting the third day, serves as a starting point with adults. As the doses are increased, strict instructions to stop all synthalin for twenty-four hours in event of even the mildest symptoms of overdosage appearing should be given. The same dosage may be resumed after a twenty-four hour rest if sodium dehydrocholate is used. If it is not, a lower level should be maintained to prevent the toxic effects of synthalin. There is no doubt that synthalin affects the level of the blood sugar. Whether treatment over a period of years will prove detrimental or not has yet to be proved. Duncan feels justified in using synthalin in every case of diabetes. If there is a substantial reduction in the insulin or an elimination of one or all doses, the additional bother and expense (if any) seem warranted. On the other hand, if proper facilities for educating the patient are not available, or if the total unitage of insulin is reduced and not the number of doses, the simpler method seems more applicable. Oral administration is the chief relief to the patient, but probably the best feature of its use is that it enlarges the "noninsulin" group of diabetic patients.

Splenectomy in Sickle-Cell Anemia.—Early splenectomy in sickle-cell anemia is advocated by Hahn on the basis of two cases in which the procedure was followed by marked clinical improvement. After splenectomy the sickle-cell trait persists unchanged. Red-cell destruction and the consequent anemia, however, are lessened. Evidence is presented to show that the sickle-cell transformation in vitro is induced in apparently normal but susceptible red corpuscles by dissociation of their oxyhemoglobin. A method is described for the production of sickle cells in vitro from apparently normal but susceptible red corpuscles freely suspended in physiologic sodium chloride solution, and for their fixation in their characteristic shape.

Heredity in Hemophilia.—Macklin asserts that a man with hemophilia will not have children showing this disease, provided he marries a normal woman who is not a carrier. Not only will the sons of such a man be normal themselves, but they cannot transmit the defect to their descendants. The daughters of such a man will be outwardly normal, but they will all be carriers of the defect, liable to give it as an evident disease to half their sons. Half the daughters of a woman who is a carrier of hemophilia are apt to be carriers themselves, transmitting the defect, as their mothers did, to half their sons as an evident defect, and to half their daughters, who will be carriers in their turn. Half the daughters and half the sons of a woman who is a carrier are apt to be normal. Theoretically it is possible for a woman to show hemophilia as a disease, provided she had a father who showed the disease and a mother who was either a carrier or hemophilic herself. If there were a woman with hemophilia, all her sons would exhibit the disease. The only

persons in a hemophilic family who can marry with impunity are the unaffected males and their descendants. All daughters of hemophilic males are carriers and should not reproduce.

Pneumonia with Chronic Lymphatic Leukemia.—Hickling and Sutliff report a case of lobar pneumonia occurring in a patient with chronic lymphatic leukemia. The daily variations in the leukocytes during the acute stage of the pneumonia and the condition of the blood after a long convalescence are described. It was found that an absolute polymorphonuclear leukocytosis occurred, although the relative count was low. The lymphocytes increased rapidly to a high figure during the first week, and decreased very slowly in the weeks of convalescence. Specimens of blood serum taken after recovery showed the presence of protective antibodies in moderate amount for the homologous organism. No agglutinins were found.

Basal Metabolism in Chronic Lymphatic Leukemia.—The study of the basal metabolism and the formed elements of the blood in thirty-one cases of chronic lymphatic leukemia leads Krantz and Riddle to the following conclusions: The basal metabolic rate in this disease is elevated when the leukemic process has progressed far enough to cause other than local symptoms. The rise in the basal metabolic rate is not closely related to the height of the leukocyte count, when a group of cases is considered. In individual cases, the basal metabolism and leukocyte count vary simultaneously in a similar manner after roentgen-ray or radon application. A dose of 250 or 500 electrostatic units of roentgen rays often produces a marked decrease in the leukocyte count. A short, transitory rise in the basal metabolism is often found within three days after the application of such treatment. The elevation of the basal metabolic rate appears to be less labile than the leukocyte count and it is more directly comparable with the patient's symptoms than with the white blood cell count. The presence of considerable numbers of distinctly immature lymphocytes is usually associated with an increased energy exchange. When irradiation causes slight or no decrease in the numbers of these cells, the basal metabolism usually does not fall to normal, and it soon returns to its former level. The number of blood platelets tend to bear an inverse relationship to the basal metabolic rate. Individuals with marked anemia appear to maintain a higher level of metabolic activity than those without this disorder. The determination of the basal metabolic rate is a valuable guide in the treatment of patients by means of roentgen rays or radon, particularly when the white blood cell count is low. Patients with lymphatic leukemia should be treated with roentgen rays or radon only when there are adequate reasons for doing so.

Primitive Human Hearts.—Two cases of functionally bilocular human hearts are described by Wood and Williams. In one of the patients, a girl who lived to the age of 15 years, the heart consisted of one atrium and one ventricle, in each of which there was evidence of septum formation which was arrested at an early stage of development. There was also stenosis of the pulmonary orifice, whose valve was composed of only two cusps, a patent ductus arteriosus, and anomalies of the great vessels. A very rare malformation, persistance of the eustachian valve, was also present. The heart of the other child (who lived seventy-two hours), functionally two chambered, consisted of a single ventricle and a large right atrium, which was only partially separated from the rudimentary left atrium. The circulatory system was distinctly amphibian, a common truncus arteriosus giving rise to the pulmonary artery. The great vessels were very primitive in type, and all anomalies were further complicated by a complete inversion of viscera.

Electrocardiogram in Angina Pectoris.—Four patients suffering from attacks of angina pectoris presumably due to coronary sclerosis were observed electrocardiographically by Feil and Siegel during paroxysms of pain. In three of these patients, there was inversion of the S-T portion of the curve in leads I and II while the patient complained of substernal pain. The inversion was greatest in lead II. The curves resumed their previous contours after the pain subsided. Further investigation was made on one patient whose electrocardiogram showed this change. Digital vagal stimulation, the drinking of cold water, and respiration failed to show any change in the electrocardiogram, which was similar to that seen during the paroxysm. One patient did not show electrocardiographic change during the paroxysm of pain.

Effect of Tryparsamide on Spinal Fluid in General Paralysis.—In a series of twenty-three patients with general paralysis studied by Bunker, it was found that, whereas the reactivity of the spinal fluid Wassermann reaction was distinctly variable, consistent results were scarcely obtained with fewer than eighty injections of tryparsamide of 3 Gm. each; thus, the five patients who have received more than 100 injections, though their spinal fluids are even yet not negative, compare favorably on the whole with the others. The definite influence which has eventually been exerted on even the most immovably positive spinal fluids suggests that complete negativity may perhaps always be capable of achievement, although in general at the cost of well upward of 100, or even 150, injections of tryparsamide.

American Journal of Surgery, New York

4: 1-112 (Jan.) 1928

Pathogenic Colon. J. W. Draper and R. K. Johnson, New York.—p. 1.
*Cesarean Section. G. DeCourcy, Cincinnati.—p. 30.
*Value to Surgeon of Basal Metabolic Rate. A. S. Jackson, Madison, Wis.—p. 49.
Open Reduction of Fractures. J. A. Jackson and C. K. Cook, Madison, Wis.—p. 57.
Diaphragmatic Hernia: Three Cases. J. N. Sisk, Madison, Wis.—p. 67.
*Multiple Adenoma of Thyroid with Glycosuria. A. W. Bryan, Madison, Wis.—p. 72.
New Bone-Holding Clamp. C. E. Mullens, Albany, N. Y.—p. 75.
Head Tilting and Turning of Ocular Origin. J. W. White, New York.—p. 77.
Two Cases of Obscure Goneitis. C. W. Peabody, Detroit.—p. 80.
Infected Myoma Uteri: Three Cases. M. M. Stark, New York.—p. 83.
Pseudopancreatic Cyst: Two Cases. F. N. Dealy, New York.—p. 89.

Cesarean Section: New Technic.—The operation devised by DeCourcy aims to avoid contamination of the peritoneal cavity and the uterine incision by the spill of fluid occurring when the bag of waters is ruptured within the uterus. To this end he delivers the infant within the gestation sac, avoiding rupture until it has been removed entirely from the operative field. In eight successive cesarean sections in which this technic was employed there were no deaths to mother or child.

Value of Basal Metabolism Study to Surgeon.—An analysis is made by Jackson of 3,085 basal metabolism records. He says that, except in the case of myxedema, little significance is attached to the reports except for the purpose of eliminating hyperthyroidism. In exophthalmic goiter the metabolic rate gives valuable data regarding the result of the preoperative treatment, likewise regarding the result of operation and the prognosis. The metabolic rate is not an index of the risk of operability in toxic adenoma, but it does give diagnostic evidence of the presence or absence of hyperthyroidism.

Multiple Adenoma of Thyroid with Glycosuria.—A case is reported by Bryan of a patient past middle life presenting arteriosclerosis and toxic goiter with associated cardiac insufficiency, tonsillar and gallbladder sepsis, and glycosuria. On removal of the tonsils and thyroid her general condition was greatly improved, and the glycosuria disappeared, probably as a result of the decreased load on the patient's metabolism, with resulting greater efficiency in the natural supply of pancreatic hormone.

American J. Tropical Medicine, Baltimore

8: 1-102 (Jan.) 1928

Present Status of Tropical Medicine in United States. G. C. Shattuck, Boston.—p. 3.
Rural and Municipal Water Supplies in Haiti. C. S. Butler and R. M. Choisser, Port au Prince, Haiti.—p. 9.
Survival of Leptospira Icteroides in Various Environments. W. A. Sawyer and J. H. Bauer, Lagos, Nigeria.—p. 17.
Complement Fixation in Diagnosis of Infections with Endameba Histolytica. C. F. Craig, Washington, D. C.—p. 29.

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Habits and Injury Caused by Bites or Stings of Some Common North American Arthropods. H. E. Ewing, Washington, D. C.—p. 39.
Efficient and Rapid Method of Concentration for Detection of Ova and Cysts of Intestinal Parasites. D. de Rivas, Philadelphia.—p. 63.
Vitamin B Content of White Yautia, Yellow Yautia and Plantain. D. H. Cook, Porto Rico, and E. J. Quinn, New York.—p. 73.

Archives of Physical Therapy, X-Ray, Radium, Omaha

9: 1-48 (Jan.) 1928

Radium in Treatment of Uterine Hemorrhage. H. Swanberg, Quincy, Ill.—p. 1.
Some Types of Neuritic Reflex Pains: Treatment by Physical Measures. W. Martin, Atlantic City, N. J.—p. 8.
Electrothermic Methods in Treatment of Inoperable Cancer of Breast. W. H. Schmidt, Philadelphia.—p. 13.
Infra-Red and Ultraviolet Ray in Treatment of Bronchial Asthma. H. B. Wilmer, Philadelphia.—p. 18.
Treatment of Carbuncles. C. L. Hustead, Falls City, Neb.—p. 22.
Palliative Treatment of Inoperable Carcinoma. J. K. Narat, Chicago.—p. 26.
Benefit of Physical Therapy in General Practice. F. L. Laffoon, Kansas City, Mo.—p. 28.

California and Western Medicine, San Francisco

28: 145-290 (Feb.) 1928

Surgical Aspects of Chest Injuries. C. D. Lockwood, Pasadena.—p. 177.
Ascending Colon: Nonmalignant Abnormalities and Constricting Bands. F. K. Collins, Los Angeles.—p. 179.
Commoner Types of Goiter: Clinical and Pathologic Classification. D. S. Pulford, Woodland.—p. 183.
Unilateral Sighting. L. Mills, Los Angeles.—p. 189.
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Advanced Cancer: Experiences in Its Treatment with Colloidal Lead. A. Soiland, W. E. Costolow and O. N. Meland, Los Angeles.—p. 198.
Urinary Calculi: Cases. W. E. Stevens, San Francisco.—p. 203.
Obstetrics in Home. H. S. Fist, Los Angeles.—p. 208.
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Hemochromatosis in Japanese: Case. G. Cheney, San Francisco.—p. 224.
Acrodynia: Case. R. C. Hough, San Diego.—p. 225.
Siphon Breast Pump. H. S. Fist, Los Angeles.—p. 225.
Senile Cataract: Cases. P. B. Wing, San Diego.—p. 226.

Journal of Industrial Hygiene, Baltimore

10: 29-52 (Feb.) 1928

Changes in Blood as Reflecting Industrial Damage. S. Meyer, Düsseldorf, Germany.—p. 29.
Metal Fume Fever: V. Results of Inhalation of Zinc and Magnesium Oxide Fumes by Animals. K. R. Drinker and P. Drinker, Boston.—p. 56.

Journal of Urology, Baltimore

19: 95-209 (Feb.) 1928

Clinical Course of Renal Tuberculosis. G. J. Thomas, Minneapolis, and T. J. Kinsella, Oak Terrace, Minn.—p. 95.
Diversion of Urine in Intractable and Incurable Vesical Tuberculosis. *Priapism: Treatment. R. W. McKay and J. A. C. Colston, Baltimore. J. K. Ormond, Detroit.—p. 109.
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Boston.—p. 181.
*Eleven Cases of Ruptured Kidney. W. R. Delzell and F. W. Harrah, New York.—p. 131.
*Polycystic Kidney Disease. R. E. Cumming, Detroit.—p. 149.
Secondary Nephrectomy with Preliminary Nephrostomy. A. H. Crosbie, Cause of Renal Back-Pressure in Obstructive Lesions of Urethra and Bladder Neck. H. A. R. Kreutzmann, San Francisco.—p. 199.

Surgical Treatment of Priapism.—McKay and Colston report two cases in which surgical measures were employed. An incision was made into one corpus cavernosum and the contents of both evacuated through it. The point of election for the incision is the midshaft of the penis, on the dorsolateral surface. It should penetrate Buck's fascia, down into the spongy tissue, carefully avoiding the central artery of the corpus. The clot should then be squeezed out gently and the fascia and skin closed with interrupted sutures of catgut. A small rubber protective drain should be left in the wound and the penis tightly bandaged. Infection should be carefully guarded against, as the remnants of the clot make an ideal culture medium. One patient is cured and has had subsequent erections. The other has been lost sight of.

Rupture of Kidney.—Delzell and Harrah emphasize the importance of pyelography in the diagnosis and treatment of this condition. Eight of their cases involved the right kidney and three involved the left kidney. Ten were caused by trauma, which varied in intensity from a slight fall to that of being struck by various objects. Four were caused by falls. Three patients were struck by automobiles; one was hit by a swinging plank; one was kicked by a horse, and one was kicked by an opposing football player. Two were injured by slight falls, one falling a distance of 4 feet and one 5 feet, which shows that seemingly small violence may cause a rupture of the kidney, if it is in a state of hydraulic tension. Two of the cases were complicated by fractures of the left tenth rib. In one of these, the fracture so masked the renal symptoms that rupture of the kidney was not suspected for some time, and the patient was not sent to the hospital until five days after the injury. In one of this series the kidneys seemed to have been crushed between the vertebrae and an opposing football player's knee, and in one by the kick of a horse in a similar manner. In one case the kidney ruptured spontaneously after the patient had suffered several attacks of renal colic over a period of seven years. Six of these cases healed under expectant treatment. The benign cases were treated with symptomatic and supportive treatment, and the patients confined to bed. Morphine was given to relieve pain and urinary antiseptics to prevent infection. Subpectoral saline solution was administered when indicated. In none was transfusion deemed necessary. Operation was required in three traumatic cases. In the first, an exploratory operation revealed that the upper pole of the kidney was completely shattered. No fresh hemorrhage ensued, so the clot and kidney fragments were removed, a drain inserted to the site of the torn kidney and the wound closed. This case became secondarily infected. In the second case the edges of the rupture were sutured satisfactorily and the hemorrhage controlled. Large pieces of gauze packing were placed about the kidney and the wound was closed. The patient made a satisfactory recovery. The third case required a nephrectomy, because, it was the opinion of the authors that, since the bleeding was persistent after eight days, it was dangerous to chance further hemorrhage by palliative surgery, and since pyelography revealed a badly injured kidney. Also, the kidney was so embedded in clot and fibrin that it seemed impossible to locate all the bleeding points, which at this time were bleeding to an alarming extent. This patient made an uneventful recovery.

Congenital Polycystic Kidney.—Cumming concludes that the etiologic factors in congenital polycystic kidneys are inherited protoplasmic insufficiency specifically expressed in the differentiation of the most complicated tubular organic structures (kidney and liver). This insufficiency is manifested by delayed differentiation of cellular unit-structures. He cites the occurrence of this condition in a maternal grandmother, uncle and aunt, the mother and the case cited. In another case the maternal grandmother and mother were known to have kidney disease. The mother had several operations for renal tumors, including a nephrectomy, after which she lived one year. A brother died at the age of 43 of bilateral renal tumors, and a sister, living at the age of 38, has kidney trouble associated with hypertension. The patient himself has bilateral polycystic kidneys.

Laryngoscope, St. Louis

38: 65-142 (Feb.) 1928

Rôle of Syphilis in Ear, Nose and Throat Work. A. T. Wanamaker, Seattle.—p. 65.
Otorhinologic Hemorrhage and Some Methods of Control. P. S. Stout, Philadelphia.—p. 71.
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Myxopapilloma of Nasal Wall in Spheno-Ethmoidal Region. A. Lobell, New York.—p. 83.
Velocity Sedimentation Test (Fahreaus) in Otology. A. Weiss, New York.—p. 85.
Case of Vascular Tumor of Membrana Tympani. F. Richman, New York.—p. 94.
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Septicemia Secondary to Acute Middle Ear Infection. C. G. Crane, New York.—p. 107.
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New Sphenoidal Trochar and Cannula for Diagnostic Puncture and Treatment of Sphenoidal Sinus. W. Spielberg, New York.—p. 122.
Boeckman-Kaplan Safety Adenoid Curette. C. Kaplan, New York.—p. 125.
Adhesive Plaster Bandage for Plastic Nasal Operations. J. N. Fishbein, Providence, R. I.—p. 128.

Michigan State M. Society Journal, Grand Rapids

27: 85-144 (Feb.) 1928

Evolution of Gallbladder Surgery: Cholecystomy Without Drainage. H. J. V. Berg, Grand Rapids.—p. 85.
Medical Treatment of Peptic Ulcer. B. R. Corbus, Grand Rapids.—p. 90.
Prehistoric Disease. J. H. Dempster, Detroit.—p. 95.
Artificial Active Immunization of Infants and Young Children Against Tuberculosis. D. S. Brachman, Detroit.—p. 99.
Esophageal and Urethral Obstructions in Myxedema. H. H. Riecker, Ann Arbor.—p. 105.
*Bacteriophage in Treatment of Furunculosis. N. W. Larkum, Lansing.—p. 106.
Spontaneous Rupture of Deep Epigastric Vein. T. P. Wickliffe, Lake Linden.—p. 109.

Bacteriophage in Treatment of Furunculosis.—The laboratory of the Michigan Department of Health has prepared a bacteriophage for the treatment of furunculosis. The bacteriophage used was a polyvirulent strain of staphylobacteriophage which has produced lysis of 110 out of 150 strains of staphylococcus. Treatment was given, in most cases, on two successive days, when 2 cc. of the filtrate was injected subcutaneously, the region varying and apparently having no significance. No further injections were necessary as a rule. Larkum states that with a single exception all patients (sixty-six) treated showed marked improvement.

Missouri State M. Association Journal, St. Louis

25: 43-96 (Feb.) 1928

*Tracheotomy in Acute Laryngeal Obstruction. O. J. Dixon, Kansas City.—p. 43.
Injuries to Spine. M. L. Klinefelter, St. Louis.—p. 50.
*Pernicious Anemia. D. R. Black, Kansas City.—p. 53.
Emergency Traumatic Surgery. J. E. Castles, Kansas City.—p. 55.
Fundamentals of Kahn Test. N. Nagle, St. Louis.—p. 59.
Some Surgical and Allied Conditions of Thyroid. C. J. Hunt, Kansas City.—p. 60.
Suppurative Pericarditis. A. J. Welch and A. S. Welch, Kansas City.—p. 65.
*Unusually Large Calculus in Vesical Diverticulum. F. M. McCallum, Kansas City, and G. H. Ewell, Madison, Wis.—p. 67.
Tularemia in Missouri: Case. O. Putman, Marceline.—p. 70.

Tracheotomy in Acute Laryngeal Obstruction.—Dixon urges that tracheotomy be taught in medical schools because laryngeal obstruction presents the same symptoms today that it did in the time of Aesclepiades. Every practicing physician should know how to perform this operation.

Colonic Irrigations in Pernicious Anemia.—Black has used various oxidizing agents as high colonic irrigations in pernicious anemia patients. Finally he decided on hydrogen peroxide as being the most efficient and presumably the only one which might be considered harmless. The results were quite encouraging. Some months later he began using *Tetanus perfringens* antitoxin in all pernicious anemia cases because tetanus bacilli were found almost as frequently as *B. welchii* in the stools of these patients; secondly, the only antitoxin available was a combination of the two; and, thirdly, the toxin of tetanus bacillus has a hemotoxic as well as a neurotoxic action. The general plan of treatment was: 1. Small blood transfusions, from 150 to 500 cc. depending on the degree of anemia, given at four day intervals until the blood picture approaches normal. 2. From 3 to 5 drachms (11 to 18.5 cc.) of dilute hydrochloric acid daily, given usually in sweetened orange or lemon juice at meal time. 3. Buttermilk between meals. 4. The Murphy-Minot diet so calculated as to give the patient 40 calories per kilogram of body weight. 5. High colonic irrigations, 1 ounce (30 cc.) of hydrogen peroxide to each 500 cc. of salt solution. During the past three months, in ten cases, 20 cc. of *Tetanus perfringens* antitoxin was injected into the colon the first and second week. The patients treated with irrigations in addition to large doses of hydrochloric acid, the Murphy-Minot diet and blood transfusions, gained strength more rapidly; their blood counts approached normal more quickly and their gastro-intestinal symptoms, including appetite, have improved more rapidly than in the preceding series of cases. The patients who received antitoxin in addition to the treatment described made about the same degree of progress relative to blood counts, gain in strength and amelioration of gastro-intestinal symptoms, and in addition reported marked improvement in spinal cord symptoms. At present, Black feels that this is the most important function of the antitoxin treatment. Of the twenty-two cases treated during the past eighteen months, all have remained in remission except two. The first patient treated died four days after admission, and one seen four months ago, with chronic deforming arthritis and cardiac decompensation as a result of mitral stenosis combined with the anemia, has failed to make a definite response.

Large Stone in Bladder.—McCallum and Ewell removed two stones weighing 26¼ and 6½ ounces (745 and 185 Gm.), respectively, from a bladder diverticulum. The patient lived five years after the operation and died with a carcinoma of the prostate.

Nebraska State Medical Journal, Norfolk

13: 41-80 (Feb.) 1928

Progress of Surgery. H. H. Davis, Omaha.—p. 41.
Dilated Duodenum. J. E. Summers, Omaha.—p. 46.
Management of Diabetes Mellitus. C. F. Ulrich, Omaha.—p. 48.
Social Aspects of Medicine. H. Von W. Schulte, Omaha.—p. 51.
Medical Man Most Liberal Philanthropist in World. E. C. Sage, Omaha.—p. 54.
Pediatric Problems. W. O. Colburn, Lincoln.—p. 56.
Activities in Medical and Health Education of Public. J. M. Dodson, Chicago.—p. 58.
Chronologic Age as Factor in Determining Type of Dementia Praecox. G. M. White, Ingleside.—p. 62.
Epilepsy: Case. R. F. Decker, Byron.—p. 67.
Dedication of New Hospital Unit University of Nebraska College of Medicine, Omaha, November 30, 1927. A. R. Mitchell, Lincoln.—p. 69.
Cholecytitis with Cardiac Disease. A. N. Bessesen, Jr., and D. H. Bessesen, Minneapolis.—p. 71.

New England Journal of Medicine, Boston

198: 1-60 (Feb. 23) 1928

Boston Medical and Surgical Journal, 1828-1928. J. Garland, Boston.—p. 1.
Century of Surgery. D. Cheever, Boston.—p. 13.
Boston Medical and Surgical Journal—Beginnings and Development. E. C. Streeter, Boston.—p. 24.
Medical Journalism and Boston Medical and Surgical Journal. M. Fishbein, Chicago.—p. 26.
False Security from One Vaccination. M. T. Muldoon, Waverley, Mass.—p. 32.
Neglected Educational Opportunities. T. S. Brown, Burlington, Vt.—p. 34.
Community Hospital. S. S. Eddy, Middlebury, Vt.—p. 37.

New York State J. of Medicine, New York

28: 181-242 (Feb. 15) 1928

Nonoperative Treatment of Chronic Glaucoma. S. B. Marlow, Syracuse.—p. 181.
Progress and Opportunities. C. H. Goodrich, New York.—p. 187.
Urinary Calculi. T. F. Laurie and A. Mason, Syracuse.—p. 192.
Acute Intestinal Obstruction: Sixty Cases. L. H. Finch, Amsterdam.—p. 195.
*Interpretation of Precordial Pain. L. H. Sigler, New York.—p. 202.
Plea for Cooperation Between Medical and Dental Practitioner. T. Blum, New York.—p. 205.
Syndrome of Spontaneous Polyneuritis. L. Grimberg, New York.—p. 207.

Interpretation of Precordial Pain.—Precordial pain is classified by Sigler on a clinicopathologic basis as follows: (*a*) psychic or neurotic pains with some toxin or focal infection as probable underlying factors; (*b*) hysterical pains; (*c*) pain due to disease of the extracardiac structures, such as the thoracic wall, pleurae, lungs, mediastium, esophagus and stomach, and (*d*) pain due to cardiovascular disease. The last group may be subdivided into two classes: that in which pain occurs on exertion or effort and that in which pain occurs in explosive outbreaks, effort not being much of a factor. In the first class are the cases of coronary sclerosis; disease of the first part of the aorta involving the coronary orifices; anemias; overexertion, and the hypertrophied hearts incident to hypertension and valvular diseases. In the second class are cases with coronary spasm; cases of acute aortitis and cases of coronary occlusion, due to embolism or thrombosis. Differentiation of the various groups is made.

Public Health Journal, Toronto

19: 51-100 (Feb.) 1928

Immunization Against Diphtheria. F. Adams, Windsor, Ont.—p. 51.
Periodic Health Examination. A. G. Fleming, Montreal.—p. 62.
Medical and Legal Aspects of Drug Addiction. A. R. Richards, Barrwash, Ont.—p. 66.
Rat and What It Means to Canada. J. R. Malek.—p. 75.

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Southern Medical Journal, Birmingham, Ala.

21: 87-168 (Feb.) 1928

Intestinal Amebiasis of Rat and Man. K. M. Lynch, Charleston, S. C. —p. 87.
Nerve Injuries Complicating Fractures. R. W. Billington, Nashville, Tenn.—p. 91.
Contusions and Sprains. I. Cohn, New Orleans.—p. 97.
*Thrombo-Angiitis Obliterans in Child. J. A. Cahill, Jr., Washington, D. C.—p. 105.
Subacute Inguinal Lymphogranulomatosis: Twenty-Seven Cases. C. L. Wilmoth, Baltimore.—p. 108.
Tuberculosis in Medical Curriculum. L. J. Moorman, Oklahoma City.—p. 114.
Location of Primary Lesion in Fifty-Three Cases of Malignant Melanoma. H. H. Cooke, Rochester, Minn.—p. 117.
Infant Mastoid as Focus of Infection. H. W. Lyman, St. Louis.—p. 120.
Pellagra in Infancy and Childhood in United States. C. J. Bloom, New Orleans.—p. 124.
*Etiology of Pernicious Anemia. S. Harris, Birmingham.—p. 137.
Conservative Management of Prostatism. H. W. E. Walther, New Orleans.—p. 142.
Cancer Problem. L. A. Turley, Norman, Okla.—p. 145.
Diagnostic Difficlties of Stomach Diseases. J. E. Knighton, Shreveport, La.—p. 149.
Certain Aspects of After-Care of New Born. L. R. DeBuys, New Orleans.—p. 152.
*Roentgen-Ray Burns of Throat: Two Cases. E. L. Posey, Jackson, Miss.—p. 155.
Greatest Machine. J. R. Garner, Atlanta, Ga.—p. 157.

Thrombo-Angiitis Obliterans in Child.—Cahill reports the case of a child, aged 2 years, of Jewish parentage, who had been in fairly good health until about the age of 20 months, when he was treated for a large furuncle of the neck. The glands of the neck became very much swollen, and the surgeon who saw him at that time believed it was due to a tonsil infection and advised removal of the tonsils. The child gradually improved from these boils, but would not eat anything and seemed sickly and would not walk. On the night of October 14 he was put to bed. On the previous day he had worn black stockings for the first time, and on awakening on the morning of October 15 he screamed with pain, was very fretful, and the mother, on examining the legs, found blackish spots and gangrenous areas over the dorsum of the heel and toes of the left foot, and also on the second, third and fourth toes of the right foot. This was a symmetrical condition. Both feet were red, somewhat swollen and very painful to pressure, and the child was extremely fretful and apparently suffering excruciating pain. The heart and lungs were apparently normal. The abdomen was normal. Owing to the extreme condition of the patient and to the fact that no definite line of demarcation showed in the gangrene, he was kept under observation and placed under medical care. The baby was markedly anemic, as was shown by the blood examination, but after transfusion and stimulation he gradually responded and improved considerably. A definite line of demarcation formed on the left leg at the junction of the middle and lower third. All of the tissues below this point were definitely gangrenous and required amputation. The second, third, fourth and fifth toes on the right foot were gangrenous at the middle and distal phalanges. An amputation was done of the left leg at the middle and lower third, and also amputation of the distal phalanges of the second, third, fourth and fifth toes of the right foot. Dissection of the vessels disclosed a clot filling the blood vessels and evidence of arteritis. The probable cause of the condition was embolism, brought about by the dislodgment of the blood clot and localization of the thrombus in the deep vessels of the leg. The anemia was probably the predisposing factor in this case. Cahill believed this to be a case of thrombo-angiitis obliterans, bilateral in type, and occurring with a definite acute onset.

Etiology of Pernicious Anemia.—Harris summarizes his views as follows: It seems probable that the liver secretes an endocrine (antihemolysin) which controls the hemolytic action of the reticulo-endothelial Kupffer cells in the liver and, perhaps, in the spleen and bone marrow. The pathologic changes in the liver found in pernicious anemia and the association of gallbladder infections with the disease as observed clinically suggest that a chronic hepatitis may inhibit the action of, or destroy, the liver cells that secrete antihemolysin, resulting in uncontrolled red blood cell destruction, thus producing the type of oligocythemia known as pernicious anemia. It is unlikely that there is a specific infection responsible for the production of pernicious anemia, but it is probable that many pathogenic bacteria, by producing hepatitis involving the endocrine secreting cells of the liver, may be factors in the causation of the disease. There may conceivably be two different relations between achlorhydria and pernicious anemia, a concomitant one and a contributing one. In the former, achylia gastrica has no etiologic relationship to pernicious anemia but is a concomitant condition resulting from a common infection of the stomach and liver which precedes the disease. Again, the achlorhydria may antedate the anemia for several years, in which instance the loss of antiseptic efficiency of the gastric juice may permit the entrance of pathogenic organisms into the duodenum, biliary passages and liver, with a resultant hepatitis, followed by an erythrocytolytic endocrine imbalance. The fact that the blood picture returns to normal and the pernicious anemia patient's general condition improves following the ingestion of liver, while symptoms referable to the spinal cord remain unchanged, indicates that the cord lesions are not in any way related to the blood changes but are probably due to infection of the cord by the same pathogenic agent that produces the changes in the liver and stomach. The anemia is relieved by liver diet, but the other pathologic conditions, such as the spinal cord lesions and the atrophic gastritis with achlorhydria, remain unchanged, so that one can deduce from this that the liver changes and the consequent severe anemia are only a part of a rather widespread toxic or infectious process. In this sense pernicious anemia is not a primary anemia but a secondary one.

Roentgen-Ray Burns of Throat.—One of Posey's cases was an exophthalmic goiter, the other a laryngitis. Roentgen-ray treatment directed to the neck was followed by swelling of the neck and throat with difficulty in swallowing and breathing. A tracheotomy in the first case was followed by death a few days after operation. In the second case the patient survived but had a stormy convalescence lasting several months and is not yet fully recovered.

Surgery, Gynecology and Obstetrics, Chicago

46: 161-302 (Feb.) 1928

Chronic Ulcer of Duodenum and Stomach. J. B. Deaver, Philadelphia. —p. 161.
*Consideration of Contour as Well as Function in Operations for Organic Ankylosis of Lower Jaw. V. P. Blair, St. Louis.—p. 167.
*Colloid Carcinoma of Stomach. J. W. Stinson, Rochester, Minn.—p. 180.
Experiences and Reflections on 1,000 Laparotomies for Myoma of Uterus. E. Essen-Möller, Lund, Sweden.—p. 187.
Suppurative Diseases of Chest. G. P. Muller, Philadelphia.—p. 193.
*Relationship of Carcinoma and Callous Gastric Ulcer. W. J. Merle-Scott, Rochester, N. Y.—p. 199.
Differential Diagnosis of Amebic Dysentery and Chronic Ulcerative Colitis by Proctoscopic Examination. L. A. Buie, Rochester, Minn. —p. 213.
*Rate of Ureteral Regeneration. S. E. Kramer, Perth Amboy, N. J.—p. 216.
Cystometric Study of Pharmacology of Bladder, with Additional Data Regarding Physiology of Urination. D. K. Rose and R. Deakin, St. Louis.—p. 221.
Form Changes in Human Uterine Gland During Menstrual Cycle. J. L. O'Leary and C. Culbertson, Chicago.—p. 227.
Brain Surgery. H. C. Naffziger, San Francisco.—p. 241.
Thoracoplastic Treatment of Pulmonary Tuberculosis. W. Denk, Vienna. —p. 249.
Blastomycosis of Esophagus: Case. P. P. Vinson, A. C. Broders and H. Montgomery, Rochester, Minn.—p. 255.
*Stabilization of Shoulder Joint for Habitual Dislocation. H. Spitzy, Vienna.—p. 256.
Simple Method of Removing Cervix with Uterus in Hysterectomy. F. H. Lahey, Boston.—p. 257.
*Surgical Procedure in Obliterative Vascular Disease (Thrombo-Angiitis Obliterans). E. V. Allen and H. W. Meyerding, Rochester, Minn. —p. 260.
*Delivery of Adherent Placenta. J. Jarcho, New York.—p. 265.
Estimation of Permanent Functional Disability Following Fractures. R. M. Carter, Green Bay, Wis.—p. 273.
Spinal Anesthesia. C. B. Schutz, Philadelphia.—p. 281.
Radium in Treatment of Uterine Diseases. I. Abell, Louisville, Ky.—p. 287.

Arthroplasty for Ankylosis of Jaw.—Blair pleads for the improvement of contour as well as for the restoration of movement. Correction or improvement in appearance may be accomplished by one, or a combination of several, of the following procedures: After the fixed joint is freed, the affected side of the mandible may be dragged forward and

fixed in this position until the tendency to recede is overcome. At first the fixation is made by interdental wiring, but later the pull of a rubber band may be used. In unilateral ankylosis, with a receding mandible, it may be necessary to section the ramus of the opposite side to get the best attainable position of the body of the jaw. The receding chin can be built out by means of an implantation of costal cartilage. The facial obliquity remaining after fixing the jaw bone in its new position can be rendered less noticeable by shifting the soft tissues of the chin laterally, by filling along the flat side of the jaw with cartilage, or by a combinanation of these.

Colloid Carcinoma of Stomach.—Among 2,516 pathologically proved cases of carcinoma of the stomach examined at the Mayo Clinic, 121 were of the colloid variety. These form the basis of Stinson's study.

Relation of Carcinoma to Callous Ulcer.—In Merle-Scott's opinion the controversy concerning the development of carcinoma from chronic gastritic ulcer has obscured the significant clinical relationship of these two conditions. It is frequently impossible to differentiate clinically the malignant from the benign callous gastric ulcers in the stage when cure is still possible. It cannot even be done with certainty at operation in many cases. As a corollary to this fact, all callous gastric ulcers are carcinoma suspects and should be treated as such, both before and at operation.

Ureteral Regeneration.—Kramer asserts that ureteral regeneration, canalization and epithelization occur rapidly when a ureteral splint is provided. The period of splinting or bridging should not be unduly prolonged because of the tissue reaction aroused by the foreign body. It appears that a splinting period of five days is ample to allow reestablishment of ureteral continuity. Ureteral stenosis may be expected with every case of ureteral anastomosis, and is more marked in cases in which an actual gap between the ureteral edges has previously existed. Ureteral dilation is always indicated following ureteral operations and should not be delayed too long.

Operation for Habitual Dislocation of Shoulder Joint.—The method devised by Spitzy is as follows: With a curved incision the insertion of the deltoid muscle is exposed. The muscle is separated from its insertion, and the main flap retracted upward. After the capsule has been exposed, a silk ligature, double four-ply strong (Turnersilk), is passed with a specially bent elevator perforated at the end, around the surgical neck of the humerus, and a double knot is made on the anterior side over the joint. This gives four strong silk ligatures parallel to one another on the anterior surface of the joint. These are transfixed and well knotted to the coracoid process, which is well exposed. The origin of the biceps muscle which is on this process prevents the slipping of the ligatures. The four threads form a strong band lying on the anterior surface of the joint. The capsule on both sides of this band is now lifted and the folds are sutured around the silk band. Therefore the sheath in which the silk band now lies is exactly similar to that of the tendon of the long head of the biceps muscle passing the shoulder joint. Therefore at this point, which is the weakest point, there is thus an artificial reinforcement of the capsule and also a shortening of the joint capsule space which he has gained by the folding over. The silk thread used by Spitzy has a tensile strength of 40 Kg. (86 pounds), so that one ligature has a resistance of 80 Kg. and with the entire band a resistance of about 160 Kg. The flap is now replaced and with perosseous sutures the deltoid tendon is fastened at the place of its insertion on the humerus. After a period of rest of four weeks the patient begins careful exercises. The patients operated on by this method recovered complete working capacity and regained free motion in the joint. Dislocation, which had been common at short intervals, never recurred.

Operation for Thrombo Angiitis Obliterans.—Allen and Meyerding urge that incision of toes or removal of toe nails should not be performed in cases of thrombo-angiitis obliterans. Amputation of toes can be successfully accomplished in selected cases. In approximately 80 per cent of all cases (excluding those complicated by edema, cellulitis or extensive gangrenous changes), amputation below the knee can be carried out successfully, provided postoperative medical measures to increase the blood supply to the stump are instituted. The results demonstrate the value of close cooperation between the clinician and the surgeon. Such results cannot be obtained in older patients whose gangrene is arteriosclerotic in origin.

Delivery of Adherent Placenta.—Jarcho reports three cases of adherent placenta in which the Mojon-Gabaston method was employed successfully. There were no untoward results.

United States Vet. Bureau M. Bull., Washington, D. C.

4: 87-202 (Feb.) 1928

Physical Therapeutic Movements, Self-Administered, for Chronic Cardiovascular Degenerations. J. R. McDill, Waukesha, Wis.—p. 87.
Administration of Medical Department of Regional Office. H. A. Smith, Baltimore.—p. 95.
*Treatment of Neurosyphilis with Tertian Malaria. R. L. Harris, Augusta, Ga.—p. 100.
Diagnosis of Chronic Epidemic Encephalitis. C. H. Denser, Chillicothe, Ohio.—p. 106.
*Exercise in Pulmonary Tuberculosis. M. L. McClung, Legion, Texas.—p. 116.
Importance of History Taking in Pulmonary Tuberculosis. B. Sullivan, Whipple, Ariz.—p. 120.
*Prostatitis as Focus of Infection: Influence of Treatment of Low Back Pain. E. D. Simpson, Fort Snelling, Minn.—p. 126.
*Value of Acetic Anhydride-Sulphuric Acid Test (Boltz Test) in Cerebrospinal Fluid. N. Novick and E. Hines, Jr., Maywood, Ill.—p. 129.
Social Work in Veterans' Bureau Tuberculosis Hospital. C. H. Stern, Detroit.—p. 138.
Importance of Adjunct Dental Treatment. L. V. Swift, Oklahoma City.—p. 143.
Tuberculosis, Chronic: Head of Humerus, Bilateral. P. P. Haslitt, Dallas, Texas.—p. 145.
Neuropsychiatric Disease (History of Onset Following Exposure to Tetra-Ethyl Lead). P. E. Reynolds, Perry Point, Md.—p. 147.

Malaria Treatment of Neurosyphilis.—Harris reports that of sixty-seven patients with neurosyphilis inoculated with tertian malaria, 25 per cent were greatly improved, 40 per cent improved, 25 per cent unimproved, 6.7 per cent deteriorated and 1.3 per cent died subsequent to treatment. Improvement was observed to follow second and third inoculations when none occurred from the first.

Exercise in Treatment of Pulmonary Tuberculosis.—McClung regards exercise as being an indispensable part of the treatment of pulmonary tuberculosis. Selection of exercise to suit each individual case, proper observation as to progress, and graduation of the dose are the keynotes to success. McClung details his prescription for a twelve weeks' course of exercise.

Low Back Pain and Disease of Prostate.—In a series of 120 cases of complaint of low back pain analyzed by Simpson, definite disease of the prostate gland existed in seventy-one patients. Following treatment of prostatitis in these cases, twenty-one patients were completely relieved of discomfort and thirty-one were improved. In practically all cases, the symptoms in the back, etc., were of long duration.

Value of Boltz Test of Cerebrospinal Fluid.—In a study of the cerebrospinal fluid of thirty-seven cases of clinically recognized general paralysis, Novick and Hines found the acetic anhydride-sulphuric acid reaction (Boltz test) to be in striking parallel to the globulin content; in thirty-two cases free from syphilis and presenting negative spinal fluids in every respect the acetic anhydride-sulphuric acid test was found similarly negative. In no single instance has he obtained a positive reaction with the acetic anhydride-sulphuric acid test in the absence of an increase of globulin. In seven cases free from syphilis, but showing traces of globulin (1 plus) in the spinal fluid, the acetic anhydride-sulphuric acid test gave parallel results.

Virginia Medical Monthly, Richmond

54: 677-748 (Feb.) 1928

Physiology of Kidney. C. C. Haskell, Richmond.—p. 677.
Diseases of Kidney: Diagnosis. F. C. Rinker, Norfolk.—p. 680.
Id.: Medical Aspect. P. S. Smith, Abingdon.—p. 681.
Id.: Surgical Aspect. J. M. Robinson, Danville.—p. 685.
Policy of State Board of Health in Regard to Tuberculosis. E. G. Williams, Richmond.—p. 691.
Cesarean Section. J. H. Peak, Louisville, Ky.—p. 696.

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Oral Sepsis from Standpoint of Internal Medicine. T. P. Sprunt, Baltimore.—p. 701.
Ringworm Infection of Glabrous Skin. L. McCarthy, Washington, D. C. —p. 706.
*Therapy in Neurotreponematosis. T. L. Driscoll, Richmond.—p. 710.
Care and Repair of Cervix and Perineum in Confinement Cases. R. P. Kelly, Lynchburg.—p. 713.
Sinus Disease: Relation to General or Systemic Conditions. W. L. Gatewood, New York.—p. 718.
Diagnosis and Treatment of Toxic Goiter. C. Williams, Richmond.—p. 719.
Diagnosis and Treatment of Conditions Commonly Seen in Throat. M. H. Williams, Roanoke.—p. 723.
Sympathetic Iridocyclitis not a Myth: Two Cases of Nonforeign Body Origin. V. K. Hart, Statesville, N. C.—p. 726.

Treatment of Neurosyphilis.—Driscoll reports four cases of neurosyphilis in which he injected finely ground spirochetes, 0.5 cc., intraspinally, at one week intervals. Definite improvement resulted in three cases.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 165-204 (Feb. 4) 1928

*Treatment of Pernicious Anemia by Liver. H. F. Brewer, A. Q. Wells and F. R. Fraser.—p. 165.
Treatment of Gastric Ulcer. T. I. Bennett.—p. 168.
*Treatment of Asthma. A. G. Auld.—p. 171.
*Fixation of Antiseptics by Dressings and Tissues. J. G. Graham.—p. 173.
*Curvatures of Spine Following Lethargic Encephalitis. R. G. Abercrombie.—p. 174.
Tetanus in Boy: Recovery. J. D. Chisholm and A. Renshaw.—p. 175.
Foreign Body in Esophagus: Difficult Removal. L. Sewell.—p. 176.
Acute Intestinal Obstruction by Bands in Children. C. Gibson.—p. 177.
*Fatal Poisoning by Borax. J. Birch.—p. 177.
Hyperpyrexia in Terminal Chronic Nephritis. H. B. Pierce, J. F. Scales and G. L. Pierce.—p. 177.
Vesical Bilharzia: Double Infection. R. B. Coleman.—p. 177.
Bilateral Embolism of Central Retinal Artery. T. G. W. Parry.—p. 178.

Treatment of Pernicious Anemia by Liver.—Nineteen patients with pernicious anemia have been treated by Brewer and Fraser with whole liver or a liver extract. Nine of them were in the first attack or in a relapse, and seven of these showed a prompt response to treatment, with a temporary rise in the percentage of reticulated red cells in the circulating blood, and a steady increase in the total red cells and the hemoglobin. The reason for the failure of the treatment in the other two patients is not clear. Ten patients commenced treatment during the remission stage or received other forms of treatment in addition, so that observations on the immediate effects of the treatment were not possible. The condition of these patients at the end of varying periods of treatment (up to six months) affords confirmatory evidence of the value of this treatment.

Treatment of Asthma.—The following method of treatment is recommended by Auld: The agar serum is incubated for about two hours at 37 C. Then 4 cc. of a 30 per cent solution of peptone is mixed with 2½ minims (0.15 cc.) of phenol (measured) for each ounce of the peptoned agar serum. No precipitate will be found in this peptone solution. It is then poured into the agar serum, and mixed up with it, when the colloidal solution remains perfectly clear. It is unnecessary to incubate further. It is best to use the patient's own serum, as it contains some appropriate antibody, more or less. When a patient has been thoroughly examined, the diet arranged, and any endocrine defect attended to, Auld first tries intravenous injection of peptone (5 per cent) up to 2.5 or 3 cc.; if little improvement is found after four or five weeks, peptoned agar serum (0.5 cc. up to 3.5 or 4 cc.) is carefully and slowly introduced into the vein when, in many cases, excellent results will be obtained.

Fixation of Antiseptics.—In the treatment of wounds with an antiseptic such as acriflavine, allowance must be made for the considerable affinity of cotton dressings for this class of antiseptic. The concentration of the acriflavine solution should be such that after the gauze has satisfied its affinity for the antiseptic there is still a sufficient concentration left free to act in the tissues. Quantitative experiments have been carried out by Graham by soaking gauze swabs in approximately three times the amount of solution which can be taken up, and estimating the concentration of the antiseptic in the fluid expressed. It has been found that after three minutes' soaking in 1:1,000 acriflavine solution, the fluid expressible from the gauze contains 1:1,600 of the antiseptic, and even after twenty-four hours' soaking the fluid expressed contains 1:1,800. When a 1:5,000 solution is employed under similar conditions, the fluid expressed from the gauze after three minutes' soaking contains 1:9,000 of the dye, and after twenty-four hours' soaking the fluid expressed contains 1:20,000. These concentrations employed according to this procedure have been shown to give a dressing which is very satisfactory for treating septic infections without inhibiting healing. When a lesser proportion of the solution is used, or when swabs are soaked successively in the fluid, there is great danger in the case of the 1:5,000 concentration that the amount of antiseptic available may be reduced to an ineffective level. Experiments on the fixation of antiseptics by tissues have shown that minced and washed muscle, while it absorbs mercuric chloride very actively, has a definite though much less marked affinity for phenol and acriflavine, the last being absorbed to a slightly less extent than by gauze.

Curvature of Spine Following Epidemic Encephalitis.—Observation of five cases has convinced Abercrombie that the spinal curvatures following epidemic encephalitis are due to a localized contraction of the prevertebral muscles, brought into play by the release of a primitive postural reflex, locally restricted in its operation. Treatment by means of corrective apparatus, having for its object the gradual overcoming of the resistance of the muscles, the reduction of the curve and the prevention of osseous deformity, is followed by material improvement.

Poisoning by Sodium Borate.—Birch reports the case of an infant, 18 days old, who had consumed about 1½ drachms (5.6 cc.) of sodium borate and boric acid, in the form of honey of sodium borate and glycerin of borax (sodium borate, 1; glycerin, 6), administered to prevent thrush, on the advice of the nurse. The child died in coma. A necropsy report is made.

1: 205-244 (Feb. 11) 1928

Portraits and Personality of John Hunter. A. Keith.—p. 205.
*Acute Abdomen. E. R. Flint.—p. 209.
*Two Cases of Cardiac Infarction. T. W. Davidson.—p. 212.
Auricular Flutter. C. E. K. Herapath.—p. 213.
Estimation of Glucose in Blood and Cerebrospinal Fluid by Maclean's Method. F. T. Grey.—p. 215.
History of Hypernephroma. K. V. Trubshaw.—p. 216.
*Formalin Injections in Gangrene of Leg: Recovery. J. A. Noble.—p. 216.
Bladder Calculus in Male Due to Foreign Body (Paraffin). E. Scott.—p. 216.
Diagnosis of Gangrene of Small Intestine. P. V. Gharpure.—p. 217.

Acute Abdominal Disease.—Flint sums up his views as follows: If a patient suddenly experiences acute abdominal pain, followed by nausea or vomiting, or both, and this is accompanied by tenderness and rigidity, possibly in some degree over the whole abdomen but most pronounced over the most painful area (which is suggestive of the site of the lesion), with or without shock, or if with the pain and vomiting there is absolute constipation, an acute abdominal condition is present which is almost certainly of a surgical nature.

Cardiac Infarction.—Both of Davidson's patients died. The autopsy disclosed calcification of the heart in one case and rupture in the other.

Solution of Formaldehyde Injections in Gangrene of Leg.—Following a severe attack of enterocolitis, Noble's patient sustained an embolism of the femoral artery by the detachment of a thrombus which had probably formed at the bifurcation of the iliac arteries. In two days, a demarcation of irregular outline was very pronounced at the junction of the middle and upper thirds of the thigh. Feeling that prevention of decay was the only hope, Noble started periodic injections of solution of formaldehyde, ½ to 1 drachm (2 to 3.75 cc.), into the tissues of the leg. The injections were both superficial and deep, and the strength varied from 2 to 40 per cent, according to the distance from the demarcation line. There was profuse discharge of pus from the demarcation line, and some gas formation in the thigh. The occlusion of the artery

spread slowly upward, and in about two months the pulsation, which had been felt above Poupart's ligament, had disappeared. A rubber tourniquet was applied just below the demarcation line to hasten separation. An incision was made below the tourniquet and the bone was isolated. Further injections of formaldehyde were made in and round the sciatic nerve, which was sensitive for several inches below the line of demarcation. Ten days later the sciatic nerve was divided, giving rise to slight and momentary pain. The next day the femur was sawed through about the junction of the middle and lower thirds. The medullary cavity was cleared out for a distance of 4 inches and packed with bipp. The necrosed tissues, still attached to the stump, were dissected off daily. The result was excellent.

Irish Journal of Medical Science, Dublin

6: 49-96 (Feb.) 1928

Treatment of Enlarged Prostate. A. Fullerton.—p. 55.
*Four Cases of Auricular Flutter. H. Moore.—p. 64.
Juvenile General Paralysis in Boy, Aged 10. H. R. C. Rutherford.—p. 80.

Auricular Flutter.—Four cases of auricular flutter are described by Moore. In the first case sinus rhythm appeared after an unknown interval following digitalis treatment, but relapse to flutter occurred later; adequate digitalis administration, however, caused the maintenance of 3:1 to 4:1 block between the fluttering auricles and the ventricles, with the result that the circulation was quite efficiently carried on for the patient's needs. In the second and third cases, on each occasion, digitalis in suitable dosage caused flutter to be replaced by auricular fibrillation, which, in its turn, gave place to sinus rhythm as a result of treatment with quinidine; in the second case, although auricular fibrillation appeared after digitalis treatment, relapse to flutter occurred on discontinuance of the digitalis when quinidine was not used after fibrillation appeared, while quinidine alone in moderately large doses was unsuccessful in the treatment of flutter but caused changes in the electrocardiogram which might be interpreted as evidence of toxic action. Each of the three relapses in the second case from sinus rhythm to flutter, as well as the first attack of flutter, was controlled by digitalis followed by quinidine: digitalis caused flutter to be replaced by fibrillation, and quinidine caused the latter to be replaced by sinus rhythm; a large dose of digitalis, however, was required on the second occasion to convert flutter to fibrillation. The two attacks of flutter in the third case were also successfully treated by digitalis followed by quinidine, but the large dose of digitalis given in the relapse caused transitory paroxysmal ventricular tachycardia to appear. The fourth case was an example of a comparatively rare condition: auricular flutter with 1:1 ventricular response.

Journal of Hygiene, London

27: 113-224 (Jan.) 1928

Significance of Pneumococcal Types. F. Griffith.—p. 113.
Differentiation of Staphylococci: Precipitin Reactions. L. S. Dudgeon and J. W. H. Simpson.—p. 160.
*Proportional Frequency of General Paralysis of Insane and Locomotor Ataxia in Different Social Classes. P. L. McKinlay.—p. 174.
*Influence of High Temperatures on Testis. J. R. Baker.—p. 183.
*Relation Between Puerperal Septicemia and Certain Infectious Diseases. P. L. McKinlay.—p. 186.
Iodine in Drinking Waters. J. B. Orr, W. Godden and J. M. Dundas.—p. 197.
Identification of Pneumococci and Tests Employed for Distinguishing Them from Streptococci. C. H. Whittle.—p. 200.
Production of Milk of Low Bacterial Content by Means of Milking Machines. A. T. R. Mattick and F. Proctor.—p. 215.

Proportional Frequency of General Paralysis in Different Social Classes.—An examination made by McKinlay of the statistics relating to broad groups of social classes in England and Wales as a whole suggests that general paralysis of the insane is proportionately more frequent in the lower than in the upper occupational classes. If, as is commonly believed, excess of mental work is a factor of importance in the etiology, its influence must therefore be more than counterbalanced by other more important predisposing factors, which must be more frequent in the lower social classes.

Influence of High Temperatures on Testis.—Experiments have convinced Baker that ordinary hot bathing does not affect male fecundity. The subjection of the scrotum of the dog for ten minutes daily for twenty-eight days to a stream of water at from 39.5 to 40.0 C. did not materially affect the testes.

Relation Between Puerperal Sepsis and Certain Infectious Diseases.—McKinlay suggests that such correlation in time and place between the prevalence or mortality of puerperal fever and the prevalence of erysipelas and scarlet fever as can be demonstrated cannot be taken to support the opinion that there is an etiologic factor common to the three diseases.

Journal of Tropical Medicine and Hygiene, London

31: 41-52 (Feb. 15) 1928

Parasite That Causes Smallpox. J. J. Clarke.—p. 41.

Lancet, London

1: 217-270 (Feb. 4) 1928

Etiology of Cardiac Failure. J. F. H. Broadbent.—p. 217.
*Incidence of Minor Psychoses. M. Culpin.—p. 220.
Tumors of Spinal Cord: Six Cases. A. M. Kennedy and L. Rogers.—p. 225.
*Passive Immunization Against Scarlet Fever. E. James.—p. 227.
Irradiated Ergosterol in Treatment of Rickets. R. Aidin.—p. 229.
Two Consecutive Abdominal Pregnancies. M. V. Webb.—p. 230.
Case of Labor with Complete Occlusion of External Os. E. O. Croft and A. M. Claye.—p. 231.
Treatment of Obesity by Ultraviolet Rays. C. L. Williamson and C. H. Broomhead.—p. 231.

Incidence of Minor Psychoses.—The results of Culpin's study suggest that the commonly supposed "causes" of psychoneurotic illness are merely factors in exacerbating a previously existing condition. Yet the fact that such illness is absent in some groups indicates the importance of studying exacerbating factors that must be present in those groups with a high sick rate.

Passive Immunization Against Scarlet Fever.—An attempt was made by James to determine the amount of antitoxin sufficient to protect susceptible contacts of scarlet fever for a period of from seven to ten days. Scarlet fever antitoxin was given intramuscularly to several series of Dick positive diphtheria convalescents. Scarlet fever attacked only those patients who were not rendered Dick negative or who became Dick positive after a varying period of immunity. Unconcentrated serums were found to be of little or no value, while of three different concentrated serums one was sufficiently potent to keep ten patients Dick negative for at least seven days in a dose of 2.5 cc. This dose has to be doubled in the case of the other two concentrated serums, and even then one patient remained Dick positive. James believes, therefore, that 5 cc. of a concentrated scarlet fever antitoxin is usually sufficient to protect susceptible contacts for a minimum period of seven days. It is probable, however, that a dose of 10 cc. is necessary in those who give a very strongly positive Dick reaction, although further evidence is required on this point.

1: 323-378 (Feb. 18) 1928

Progress of Surgery from Hunter's Day to Ours. H. Waring.—p. 323.
John Hunter's Cardiac Infarct. J. A. Ryle.—p. 332.
Voluntary Hospitals and Public Authorities. W. Hamer.—p. 334.
*Treatment of Burns by Tannic Acid. R. M. Gordon.—p. 336.
Epidemic of "Influenza" at Sea. R. G. R. West.—p. 337.
Case of Subacute Combined Sclerosis of Cord of Sudden Onset. S. C. H. Worseldine.—p. 338.
Fallacy of Color Index. B. Derham.—p. 338.

Tannic Acid Treatment of Burns.—Gordon's patient, a child, aged 2 years, was so severely scalded that any hope of recovery seemed remote. Yet, in spite of the presence of bronchitis and the later development of bronchopneumonia, she did recover, and tannic acid was probably the means of saving her life, by controlling the developing toxemia before it had advanced very far. Strips of gauze, dipped in freshly prepared 2 per cent solution of tannic acid, were laid over the surface. The whole was then bound loosely in gauze bandages and the child taken back to the ward after ten minutes' anesthetic. The dressing was kept moist by sprinkling it frequently with the solution. The loss of body fluids was minimized by the astringency of the tannic acid, and the surface of the wound remained perfectly dry until the healing processes had loosened the coagulum.

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Medical Journal of Australia, Sydney

1: 63-98 (Jan. 21) 1928

*Mechanism of Pain Production in Abdominal Visceral Disease: Pains of Peptic Ulcer. V. J. Kinsella.—p. 64.
Acute Nicotine Poisoning. F. A. E. Lawes.—p. 84.

Mechanism of Pain Production in Gastric Ulcer.—Kinsella advances the theory that congestion, rather than disordered motor phenomena, is the cause of the pain accompanying gastric ulcer. The congestion in indurated tissue is aggravated by functional hyperemia.

Bulletin Médical, Paris

42: 85-112 (Jan. 25-28) 1928

Tricuspid Insufficiency. C. Laubry and D. Routier.—p. 91.
*Clinical and Bacteriologic Diagnosis of Secondary Infectious Endocarditis of Slow Evolution. G. Marchal and A. Jaubert.—p. 93.
*Intravenous Injections of Sodium Salicylate in Acute Articular and in Cardiac Rheumatism. R. Giroux and L. Kervarec.—p. 100.
Tobaccoism and Cardiovascular Disturbances. J. Walser.—p. 102.

Clinical and Bacteriologic Diagnosis of Secondary Infectious Endocarditis of Slow Evolution.—Secondary malignant endocarditis of slow evolution is characterized by the following clinical features: rheumatism in the history; insidiousness and long duration of the initial stage; uncontrollable fever in a patient with heart disease; the fixity of the pre-existing orificial murmur; various emboli; Osler's erythematous nodosities; purpura and microscopic hematuria; frequent arthralgias, and splenomegaly. Blood cultures are rarely positive. *Streptococcus viridans* is the pathogenic organism. At necropsy there are found small vegetations of the heart showing no tendency to ulcerate. Most of the authors' patients had hippocratic fingers. In one out of ten cases, they observed Osler's erythematous and painful nodosities. In three of ten cases there was purpura. In three cases there was a history of syphilis. A rich culture quickly obtained is indicative of a speedily fatal issue. The only case of cure reported is that of Thayer, who used intravenous injections of 3 per cent magnesium sulphate solution, autovaccine and injections of polyvalent antistreptococcic serum. Four cases are reported.

Intravenous Injections of Sodium Salicylate in Acute Articular and in Cardiac Rheumatism.—In more than 300 intravenous injections of sodium salicylate given in cases of acute articular rheumatism, Giroux and Kervarec never observed the occurrence of shock. The authors recommend a dextrose solution containing 5 per cent of salicylate in cases of articular rheumatism and especially in cases developing cardiac rheumatism. It is indispensable in simple endocarditis and may even overcome a valvular murmur. The salicylate sometimes has a sclerosing action on the veins. In rheumatism, whether or not complicated by cardiac lesions, the salicylate acts, first of all, on the signs of endocarditis and secondarily on the fever and diuresis.

Bulletins de la Société Médicale des Hôpitaux, Paris

52: 69-130 (Feb. 2) 1928. Partial Index

*Rôle of Infection in Treatment of Pernicious Anemia by Whipple's Method. E. Bernard and Desbucquois.—p. 69.
Acute Encephalitis with Subintrant Convulsions: Effect of Fixation Abscess on Convulsions. D'OElsnitz, J. Turillot and J. Prince.—p. 77.
Spirochetosis Complicated by Aortic Murmur. Loeper, E. Schulmann and A. Lemaire.—p. 83.
Lead Colic Followed by Uremia with Latent Subacute Lead Nephritis. C. Aubertin and P. Foulon.—p. 88.
Case of Primary Tuberculous Cervical Pachymeningitis. Grenier and M. Duvic.—p. 92.
Postoperative Abscess of Lung. E. Bernard, Gilbert-Dreyfus and Desbucquois.—p. 97.
Streptococcic Abscess of Lung. E. Bernard and Desbucquois.—p. 103.
Case of Hyperacute "Pseudogranulitis?" M. Brulé, R. Huguenin and P. Foulon.—p. 117.
Pseudosarcoma of Spleen with Mycotic Forms in Tissues. P. Émile-Weil, P. Chevallier and F. Flandrin.—p. 123.

Rôle of Infection in Treatment of Pernicious Anemia by Whipple's Method.—A man, aged 66, presented a cryptogenetic anemia of severe degree. After seven weeks' treatment by the Whipple method, his erythrocyte count rose from 760,000 to 4,200,000. During treatment, a slight bronchial infection with fever (39 C.) reduced the erythrocyte count, which had then reached 3,600,000, to 2,200,000. Ten days later it had again risen to 3,500,000. The authors draw attention to the fact that infection also diminishes the action of insulin on glycemia.

Paris Médical

64: 97-128 (Feb. 4) 1928

Craniocerebral and Spinomedullary Roentgen-Ray Diagnosis with Iodized Oil. J. A. Sicard and J. Haguenau.—p. 97.
Pneumoperitoneum, Insufflation and Opaque Intrauterine Injection. C. Béclère.—p. 109.
*Indications for Radiotherapy and for Surgical Treatment in Exophthalmic Goiter. P. Sainton.—p. 120.
*Roentgen-Ray Treatment of Hyperchlorhydria and Gastric Ulcer. Solomon.—p. 123.
Asthma and Roentgenotherapy. P. Gibert.—p. 126.

Indications for Radiotherapy and for Surgical Treatment in Exophthalmic Goiter.—The tumorous goiter and Plummer's toxic adenoma should be treated surgically. The true exophthalmic goiter, diffuse and vascular, responds in many cases to radiotherapy. While surgical treatment gives more complete and rapid results, it involves greater risks. In choosing between the two methods, one must consider the age, social condition, state of nutrition and of the heart. Roentgenotherapy must not be prolonged indefinitely, as its effects might prove an obstacle to later necessary operation.

Roentgen-Ray Treatment of Hyperchlorhydria and Gastric Ulcer.—From a study carried out by Solomon on thirty patients presenting gastric disturbances connected with a hyperchlorhydria more or less intense, or indubitable symptoms of gastric ulcer, he concludes that roentgenotherapy is indicated in painful gastric conditions connected with hyperchlorhydria, when the usual drugs have failed. It alone, or in combination with a drug and diet treatment, is capable of curing a large number of patients. In gastric or duodenal ulcer, roentgenotherapy takes a prominent place between surgical treatment and drug and diet treatment. In the sequelae of gastro-enterostomy it often gives brilliant results. The technic is described.

Presse Médicale, Paris

36: 81-96 (Jan. 21) 1928

*Etiology and Treatment of Epilepsy. P. Marie.—p. 81.
Clinical Forms of Gonococcal Coxitis. L. Langeron and J. Delcour.—p. 83.
Hydatic Cyst and Salmonellosis. E. L. Peyre.—p. 85.

Etiology and Treatment of Epilepsy.—The delivery is the most frequent etiologic cause of so-called essential epilepsy beginning in infancy or in the first years of adolescence. Infections come second. In epilepsy of the adult, the etiology varies widely; traumatisms of the cranium, lesions of one of the sense organs, pleuropulmonary or cardiac lesions. A prominent factor in epilepsy in the woman is puerperal eclampsia. Senile epilepsy is usually due to lesions of the brain. Pierre Marie is convinced that epilepsy is not necessarily a hereditary disease. Two new remedies for epilepsy are phenobarbital and borates. The author combines the former with potassium borotartrate, beginning the treatment in children with the tartrate, and if the number of attacks remains stationary or increases, adding phenobarbital. In adults he begins immediately with the combined treatment. The patients are given thirty glass tubes, each containing 3 Gm. of potassium borotartrate. The patient opens one tube of the powder a day and dissolves it in about 125 Gm. of water, taking one third of the whole amount before each meal. In cases in which phenobarbital is to be combined with the tartrate treatment, it is enough to give 0.1 Gm. of the former every second day. If the attacks continue to be frequent, this dose may be given daily. It should be given daily for three days before the menstrual period, throughout the period and for three days afterward. The tablet of phenobarbital may be taken in the evening, half an hour before retiring, with a hot drink.

36: 97-112 (Jan. 25) 1928

*Inflammations of Arteriocapillary Endothelium in Slow Malignant Endocarditis. P. Merklen and M. Wolf.—p. 97.
Toxi-Infectious Neuraxitis and Cruchet's Disease. P. Pagès and H. Viallefont.—p. 100.
*Protein Shock in Infectious Jaundice of Catarrhal Type. E. Pocréan.—p. 101.

Inflammations of Arteriocapillary Endothelium in Malignant Endocarditis.—Infectious endocarditis is not localized in the endocardium. The streptococcus may attach itself to the arteriocapillary walls as well as to the valves and to the endocardium. In slowly progressing endocarditis the infectious foci develop one after another and may or may not be manifested by rise of temperature and of pulse or marked by purpura, Osler's nodules, petechial purpura at the level of the capillaries and precapillaries, visceral infarcts and arteritis. Their production varies with the phases of allergy through which the patient passes in his struggle with the streptococcus.

Protein Shock in Infectious Jaundice of Catarrhal Type.—Injections of small amounts of proteins, which normally give very slight reactions, in cases of catarrhal jaundice produce a shock characterized by a rise in temperature and polyuria. Protein therapy on a reduced scale improves the general condition of the patient without influencing the duration of the disease.

Revue Médicale de la Suisse Romande, Geneva

48: 1-80 (Jan. 25) 1928

*Peculiar Form of Acrocyanosis Combined with Motor Disturbances of the Fingers. A. Mathez.—p. 1.
Serodiagnosis of Tuberculosis by Vernes' and Besredka's Methods. V. E. Badoux and M. Narbel.—p. 21.
Giant Cell Tumor of Upper Portion of Tibia: Resection of Epiphysis: Autograft. R. Montant.—p. 46.
Ileocecal Invagination Following Carcinoid. J. E. W. Brocher.—p. 50.

Peculiar Form of Acrocyanosis Combined with Motor Disturbances of the Fingers.—In the five cases reported by Mathez, the fingers were slightly flexed, the flexion increasing in degree toward the little finger. There was acrocyanosis. These disturbances were not congenital. The deformity seems to spring directly from a disturbance of muscular tonus and indirectly from an endocrine lesion. The physiologic equilibrium of tonicity between the flexor and extensor apparatus of the forearm is upset. The vitiated secretion of the thyroid probably reacts on the spinal cord and disturbs its normal function. Thyroid therapy is indicated and if this fails, Leriche's operation may be done when the deformities become troublesome by reason of their extension.

Schweizerische medizinische Wochenschrift, Basel

58: 73-96 (Jan. 28) 1928

French Pathologico-Anatomic School of Diagnosis from 1819; Bretonneau, J. Karcher.—p. 73.
*Pulmonary Embolism. W. Scheidegger.—p. 78.
*Is Calmette's Protective Inoculation Free from Danger? W. Silberschmidt.—p. 85.
Foreign Body in the Esophagus. S. Brunschwig.—p. 86.
Case of Reflex Thymogenic Anarthria After Tonsillectomy. K. Bernfeld.—p. 88.

Incidence of Postoperative Pulmonary Embolism.—In the years between 1910 and 1924, among 20,779 operations in Basel and Berne, there were 143 cases in which embolism was discovered at necropsy. Two thirds of all the emboli occurred after operations on the gastro-intestinal tract. In 60 per cent, carcinoma was the indication for operation. In 0.19 per cent of the cases of embolus, the latter was the principal cause of death; in 0.49 per cent it was a secondary cause. Two thirds of the deaths from embolism followed operations in which bacteria gained access to the operation wound. One third followed aseptic operations. Inflammation plays an important rôle in the origin of the thrombus and embolus. The deep veins of the lower extremities form the principal source of the emboli (55 per cent), with a preference for the left side of the body. The venous plexus of the lower abdomen comes second. Only 1.9 per cent occurred in the saphenous vein. Most of the emboli occurred on the third day after operation; about half as many on the fifth, seventh and ninth days. The embolism was bilateral in 39.5 per cent of the cases; it was in the right lung in 35.2 per cent; in the left lung in 25.2 per cent. The place of origin of the thrombus has nothing to do with the location of the embolus in the lung. The lower lobes are favored, the right more than the left. Embolism affected both sexes equally. The time of year did not seem to exert any influence. Increasing age seemed to bring an increasing liability to the formation of thrombus and embolus. Pathologic conditions predisposing to embolus are lesions of the circulatory apparatus, of the lungs and of the gastro-intestinal tract (carcinoma). Among 119 cases of embolus, a malignant tumor (most often carcinoma) was mentioned sixty-eight times as the primary cause of disease.

Is Calmette's Protective Inoculation Entirely Free from Danger?—Silberschmidt performed a great number of injection and feeding experiments with guinea-pigs and rabbits, using Calmette's tuberculosis vaccine. In no case could he find signs of a progressive tuberculosis. He had no unfavorable results with its use in thirty new-born infants.

Archivio Italiano di Urologia, Bologna

4: 1-104 (Oct.) 1927

*Vesical Lymphosarcoma. P. Marogna.—p. 3.
Endovesical Electrocoagulation. G. Corti and D. Maveri.—p. 27.
Hematuria of Unknown Cause. G. Bloch.—p. 39.
Traumatic Pseudohydronephrosis. G. Nisio.—p. 49.
Renal Torsion. N. V. Bedarida.—p. 74.

Primary Lymphosarcoma of the Bladder.—In a patient, aged 36, with lymphosarcoma of the bladder, all available data pointed to the lymphatic origin of the growth. Out of forty-eight patients—dead from various diseases—varying from fetuses before term to persons 73 years old, only seventeen exhibited either scattered lymphocyte elements or nodes in the bladder. Premature fetuses and the new-born proved invariably negative as to such elements. Positive cases were always those of patients with some acute or chronic infectious disease or cystitis. Among thirty-eight apparently normal dogs, cats, lambs, rabbits, etc., lymphoid elements were found only twice in the bladder.

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Ospedale Maggiore, Milan

15: 461-494 (Dec. 31) 1927

Water and Salt Metabolism. G. Bruni.—p. 461.
*Abdominal Cysts. C. R. Fumagalli.—p. 473.
Cancer in the Middle Ear. M. Maestranzi.—p. 481.
*Retroperitoneal Tumors. G. Bonfanti.—p. 489.

Mesenteric Cyst.—At the Milan University surgical clinic, among several thousand abdominal operations, only two cases of true mesenteric cyst have been found in a twenty year period. The literature contains only about 200 verified cases. Fumagalli reports a case in a child, aged 13. The patient recovered after operation. The growth was a lymphatic cyst of the mesentery of the lower small intestine.

Retroperitoneal Lipomas.—Bonfanti adds one case to the 113 cases of retroperitoneal tumor found by Lecène (1919) in the literature. The growth was discovered during an exploratory laparotomy and filled the whole abdomen. The patient recovered after an attempted removal had failed.

Riforma Medica, Naples

44: 25-48 (Jan. 9) 1928

Sexual Impotence and Annulment of Marriage. F. Piccinino.—p. 25.
*Diagnosis of Undulant Fever and Typhoid. L. D'Amato.—p. 32.
Mammary Tuberculosis. V. Aloi.—p. 33.
Basal Metabolism and Organotherapy in Women. D. P. Marinucci.—p. 35.

Hemoclastic Test of Typhoid and Undulant Fever.—This test for the differential diagnosis of typhoid, paratyphoid and undulant fevers is based on the injection of the respective vaccine. The result is considered positive when the decrease of leukocytes after the injection of the vaccine is about or over 1,000. In forty-eight cases of undulant fever, the test with melitensis vaccine was invariably positive, while it was negative, or at the most doubtful, with typhoid vaccine. On the other hand, the test was positive with typhoid vaccine in thirty-nine cases of typhoid while negative, or at best doubtful, with melitensis vaccine. In sixteen cases of paratyphoid, the melitensis test proved consistently negative, while the typhoid vaccine yielded positive or doubtful results. Control tests with milk injections in eighteen cases of undulant fever and twelve of typhoid and paratyphoid proved negative.

Revista Médica Latino-Americana, Buenos Aires

13: 239-397 (Nov.) 1927

*Torsion of Ovarian Cysts. R. Araya and C. Carbó.—p. 239.
*Basal Metabolism in Otorhinolaryngology. E. Casterán.—p. 269.
Hospitalization of the Insane. L. Esteves and J. d'Oliveira Esteves.—p. 287.
Multiple Septicemia After Puerperal Fever. A. D. Cisneros and R. C. Bizzozero.—p. 302.
Cholesterosis of Gallbladder with Echinococcosis. D. del Valle (H.) and R. E. Dónovan.—p. 311.
Treatment of Nephroptosis. V. Ruiz.—p. 315.

Torsion of Ovarian Cysts.—Among 176 cases of ovarian cyst, in eighteen, i. e., 10.22 per cent, a twisted pedicle developed. Torsion is more common in dermoid cysts (13.53 per cent) than in mucoid cysts (9.27). In only three of these cases could pregnancy or labor be blamed, and in one a fecal mass. The majority (thirteen) of the cases were chronic. The fluid from cysts with torsion is more toxic than that from uncomplicated ones. Diagnostic confusion with peritonitis, ruptured extra-uterine pregnancy, ileus, appendicitis and salpingo-ovaritis is frequent. Surgical treatment is satisfactory, if applied immediately. Fifteen patients were discharged in good condition in a very short time. One left in poor condition, but she suffered also from puerperal fever. The two fatal cases were: one of postoperative autointoxication changing into parenchymatous nephritis, and one of suppurative pelvioperitonitis and double perisalpingitis.

Basal Metabolism in Otorhinolaryngology.—In ten patients with osseous otitis and fifteen with ozena, the basal metabolism was from 10 to 25 per cent below normal. In twenty-four cases of spasmodic rhinitis, the values were 15 per cent below normal, but between crises they increased as much as 30 per cent. Such data lend support to the theory of an endocrine factor in these conditions. In eight cases of congestive rhinitis and in twenty-five adenoid cases (both before and after operation), basal metabolism remained normal.

Semana Médica, Buenos Aires

34: 1781-1844 (Dec. 29) 1927

Infant Mortality. G. Aráoz Alfaro.—p. 1781.
Legal Differentiation of Burns. J. Llambías and J. C. Belbey.—p. 1794.
Syphilis After Prophylactic Treatment. P. L. Baliña and R. Baliña.—p. 1796.
Spinal Fluid in the New-Born. J. P. Garrahan and L. D'Ascoli.—p. 1801.
*Malaria Treatment of General Paralysis. M. Alurralde, M. J. Sepich and R. B. Boisbehere.—p. 1804.
Protein Determination in Spinal Fluid. F. C. Arrillaga and C. Rechniewski.—p. 1815.
*Inguinal Hernia of Bladder. I. Goñi Moreno.—p. 1819.

Malaria Treatment of General Paralysis.—Out of twenty patients with general paralysis treated with malaria (quartan), 25 per cent returned to their former work, 20 per cent improved considerably, 15 per cent improved to some degree, 15 per cent have not changed and the rest are still under treatment, proved resistent or disappeared.

Vesical Hernia in a Child.—Of two cases of inguinal hernia of the bladder, here reported, one was in a child 2 years old. Only four cases in children were found in the literature. The only symptom was nocturnal enuresis. The presence of such a hernia may be overlooked if another peritoneal hernia exists. Incidentally, in cases of nocturnal enuresis, relief may be secured with intraperineal injections of sodium chloride solution (20 to 50 cc.).

Archiv für klinische Chirurgie, Berlin

149: 213-420 (Jan. 7) 1928

Experimental Study of Joint Infection. R. Demel.—p. 213.
Basal Metabolism Determinations in Fifty Cases Before and After Thyroidectomy. F. Bauer.—p. 222.
*Peptic Jejunal Ulcer. S. E. Sokolov.—p. 230.
Sarcomatous Degeneration in Osteitis Deformans. F. Speiser.—p. 274.
*Total Gastrectomy for Cancer. J. Miyagi.—p. 296.
Raynaud's Disease as Hyperepinephrinemia. W. A. Oppel.—p. 301.
Primary Resection of Urethra Without Retention Catheter and Without Temporary Urinary Drainage. B. E. Frankenberg.—p. 331.
*Lymphatic System of Rectum: Carcinoma Metastases. Y. Semba.—p. 336.
Lymph Vessels of Liver. Y. Semba.—p. 350.
*Diagnosis and Operative Treatment of Splenomegaly. N. W. Schwarz.—p. 356.
Results of Ligation of Hepatic Artery. L. Loeffler.—p. 370.
Osteitis Fibrosa of Jaw: Influence on Dentition. K. Spring.—p. 385.
Appendicitis and Cholecystitis. J. M. Irger and B. G. Dragun.—p. 402.

Peptic Jejunal Ulcer.—Sokolov concludes that the postoperative incidence of peptic jejunal ulcer for all cases is from 1 to 2 per cent. This figure is constant and appears to indicate that there exists a definite type of patient in whom a gastro-enterostomy is contraindicated. Unfortunately, we are not able to recognize this type beforehand. Occurrence of gastric ulceration in several members of the same family and multiple ulcers found at the primary operation suggest the existence of such a predisposition.

Total Gastrectomy for Cancer.—The total number of complete extirpations of the stomach reported up to 1927 was ninety. Of these thirty-four were reported as being followed by recovery. Miyagi points out that total gastrectomies in the strict sense of the word have been performed even more rarely than these figures would indicate. To conform to the term total gastrectomy, the organ must be severed above the cardia through the esophagus. Five cases of complete extirpation for malignant disease are reported. In his experience, a median longitudinal incision combined with a left-sided transverse incision affords the best approach. Esophagojejunostomy is preferable to esophagoduodenostomy. Liquid food is given the day after operation. The mortality in his own experience and in that of others was 44 per cent.

Anatomic Studies of the Lymphatic System of the Rectum; Formation of Metastases in Carcinoma of the Rectum.—Semba divides the lymphatics of the rectum into the superficial and the deep systems. The superficial lymphatics lie chiefly below the insertion of the levator ani muscle into the rectum. In the anal zone they form a rete lymphaticum haemorrhoidale and drain into the superficial inguinal glands. The deep lymphatics have their origin above this insertion. They are distributed deeply in the pelvis alongside of the arteries in their upward course. This distribution explains the method of metastasis of a rectal carcinoma. With a low-seated rectal carcinoma the earliest metastases are found in the superficial inguinal glands; with a carcinoma higher up, the deep pelvic lymph glands, the peritoneal glands and the liver itself become involved. The frequent futility of radical operation in a high-seated rectal carcinoma is thus explained. In dealing with a low-seated rectal carcinoma, one should look for an enlargement of the inguinal glands. These should be extirpated radically before the operation on the rectum itself. At the operation one should look for enlarged glands in front of the sacrum. These likewise require careful dissection.

Diagnosis and Operative Treatment of Splenomegaly.—The histopathologic changes that exist in the spleen in splenomegaly often show a similar picture in different clinical types. No one clinical type seems to possess a characteristic histopathologic picture. The differential diagnosis between Banti's disease, hemolytic icterus, and hypertrophic liver cirrhosis, is frequently impossible to establish on the basis of clinical and hemotologic studies. Apparently there exist mixed forms of these hepatosplenic diseases. From a practical standpoint, however, the difficulty in diagnosis is of no great importance, for in all of the three types splenectomy is indicated. It is the only rational treatment and in a considerable number of cases gives very good results.

Beiträge zur Klinik der Tuberkulose, Berlin

67: 467-781 (Dec. 10) 1927

Tuberculosis of Pulmonary Apices. G. Simon.—p. 467.
Benign Forms of Cavitation. W. Lindig.—p. 480.
*Vomiting in Pulmonary Tuberculosis. T. Sternberg.—p. 488.
Pressure in Pleural Space. A. Bernou and F. Cardis.—p. 492.
*Simultaneous Bronchiectasis and Pulmonary Tuberculosis. H. Kausch and R. Steinert.—p. 498.
So-Called Dry Bronchiectasis. S. A. Reinberg.—p. 507.
Changes in Pulmonary Tissue After Prolonged Exclusion by Thoracoplasty. M. Staemmler.—p. 518.
*Reinfection After Healed Tuberculosis. H. Dold.—p. 524.
"Open Tuberculosis": Welfare Work and Treatment. G. Krutzsch.—p. 530.
Psychic Condition of Sanatorium Patients. W. Herich.—p. 536.
*Blood Picture, Sedimentation Speed, Matéfy Reaction and Urochrom Excretion in Pulmonary Tuberculosis. C. E. Schuntermann.—p. 544.
*Diabetes, Adiposity and Gout Combined with Pulmonary Tuberculosis. H. Wassmund.—p. 552.
Camphor Treatment of Late Stage of Pulmonary Tuberculosis. R. Michel.—p. 577.

Roentgenogram as Aid in Prognosis of Pneumothorax. F. Fleischner.—p. 582.
Roentgenogram as Aid in Diagnosis of Active Bronchial Gland Tuberculosis in Childhood. E. Wahncau.—p. 601.
Percutaneous Tuberculin Test. A. V. von Frisch and K. P. von Eiselsberg.—p. 620.
Atypical Old Tuberculin Reaction. A. V. von Frisch.—p. 635.
*Daranyi's Serum Reaction in Tuberculosis. G. C. Peracchia.—p. 641.
Glycerin Bouillon Sensitiveness. G. Demohn and H. Fernbach.—p. 649.
Tuberculin Sensitiveness and Bouillon Sensitiveness. H. Fernbach and G. Herzger.—p. 666.
Influence of Various Tuberculins in Leukocytic Blood Picture in Pulmonary Tuberculosis. J. Behmann.—p. 678.
Optimal Conditions for Differentiating Between Breath Sounds and Accessory Sounds. A. Winkler.—p. 684.
Spirometry: Technic. A. Anthony.—p. 711.
Effect on Electrocardiogram of Intrathoracic Mechanical Influences on the Heart, Especially in Pneumothorax. Rehberg.—p. 725.
*Sauerbruch-Gerson Diet in Pulmonary Tuberculosis. G. Pfeffer and E. Stern.—p. 742.
Lipase in Tissues, Particularly in Granulation Tissues in Surgical Tuberculosis. H. Takebayashi.—p. 748.
Pneumonomycosis Penicillina, Lung Tumor of Occupational Origin. R. Nussbaum and T. Benedek.—p. 756.
Dermographic Symptom in Pulmonary Tuberculosis. A. Petoe.—p. 771.
Fibrin Bodies in Pneumothorax Space. L. Wischnowitzer.—p. 773.
Can Vaccination of Infants Against Tuberculosis Activate a Preexisting Infection? Fedders.—p. 775.
Instrument for Obviating Pyopneumothorax from Intrapleural Negative Pressure. H. Wiercinski.—p. 778.

Vomiting in Pulmonary Tuberculosis. — Sternberg calls attention to chronic granular pharyngitis as cause of vomiting in the tuberculous. This responds well to painting with compound solution of iodine. Vomiting may be a forerunner of amyloidosis, or the first symptom of secondary tuberculous meningitis. Congestive catarrh of the stomach, a consequence of cardiac insufficiency, and neuritis of the phrenic nerve, a sequela of basal pleuritis, are further causes. It is generally independent of the taking of food and of the quality of the latter. It may be psychogenic, connected with the idea of the swallowing of sputum. Remedies that act on the vomiting center are recommended, also psychotherapy.

Simultaneous Bronchiectasis and Pulmonary Tuberculosis.—In two cases reported by Kausch and Steinert, bronchiectasis and tuberculosis developed independently in the same lung. In the first, a dry bronchiectasis preceded the tuberculosis by about four years, but was not diagnosed till after death. It did not have any important influence on the course of the tuberculosis. In the second case, the diagnosis of bronchiectasis was made with the help of the roentgen ray, which also revealed a healed tuberculous process in the apex.

Reinfection After Healing of Tuberculosis.—Eighty guinea-pigs were inoculated with tubercle bacilli of low virulence. Three and a half and six months after cure of the resulting infection (spontaneously or by operation) an injection of virulent tubercle bacilli was made. The result was the same as in animals that had not been previously infected.

Blood Picture, Sedimentation Speed, Matéfy Reaction and Urochrom Excretion in Pulmonary Tuberculosis.—The finest indicators for increased tissue destruction and protein disintegration are the reactions based on shifting of the colloid content of the serum, i. e., the Matéfy reaction and sedimentation speed of the blood. A higher grade disintegration of protein is necessary to bring the excretion of urochrom above normal. Schuntermann finds these reactions, together with the blood picture, valuable in diagnosis and prognosis of pulmonary tuberculosis in adults.

Diabetes, Adiposity and Gout Combined with Pulmonary Tuberculosis.—In 8,000 cases of pulmonary tuberculosis, Wassmund found sixty cases of diabetes, forty-six of adiposity, twenty-one of gout. The prognosis of tuberculosis associated with diabetes is not favorable; with adiposity, it is fairly good; with gout, it is good. In this combination, diabetes frequently tends to improve. Tuberculosis, particularly the exudative forms, sometimes reacts badly to insulin. Thyroid for treatment of adiposity is contraindicated in all severe, progressive pulmonary processes. Moderation must be used in dietetic treatment. Protein therapy for gout is strictly contraindicated. In treatment by diet, exercise, baths, etc., extremes must be avoided, but in general gout may be successfully controlled by rational measures without unfavorable result as regards the tuberculosis.

Value of Daranyi's Serum Reaction in Tuberculosis.—Peracchia found that the Daranyi reaction was not specific for tuberculosis. Furthermore, the general condition of the patient was a factor in the outcome. While it was strongly positive in cases with distinct cachexia and severe intoxication, it was negative in active forms of tuberculosis of the glands and bones, with good general condition.

Sauerbruch-Gerson Diet in Pulmonary Tuberculosis.—Pfeffer and Stern treated forty patients with severe and moderately severe pulmonary tuberculosis with the Sauerbruch-Gerson (acid-producing) diet for two and one-half months. As regards the lungs, one patient was much improved, sixteen showed some improvement, seven were uninfluenced and sixteen became worse. Weight was increased in all, but otherwise the general condition showed little influence from the treatment. He saw no effect from the mineral salts mixture.

Beiträge zur klinischen Chirurgie, Berlin

141: 389-720, 1927

Clinical Impressions of Southern Brazil. J. Jungbluth.—p. 400.
Causes of Postoperative Death. R. Stich.—p. 406.
*Treatment of Cardiovascular Disturbances Before, During and After Operation. C. Hirsch.—p. 428.
Muscle Incisions and Nerve Supply of Muscles. E. Lexer.—p. 436.
Homeotransplants of Skin in Uniovular Twins. K. H. Bauer.—p. 442.
Infection of Intact Skin and Its Prevention. H. Cramer.—p. 448.
Results of Roentgen-Ray Treatment of Acute Inflammations. O. Seemann.—p. 454.
Injury and Tuberculosis. A. Schmidt.—p. 467.
*Resistance to Cold of Transmissible Experimental Cancer. W. Koose and A. Lemmel.—p. 489.
Injuries from Electric Current. G. Delkeskamp.—p. 515.
Enucleation of Eye-Ball and Cartilage Transplantation. A. Faber.—p. 524.
Sinus Pericranii. P. Seulberger.—p. 528.
Hypoplasia of Pituitary. H. Fründ.—p. 543.
Alcohol Injections in Trigeminal Neuralgia. A. Kantorowicz.—p. 561.
*Goiter Problem: Toxic Adenoma. E. Bircher.—p. 580.
Results of One Thousand Goiter Operations. R. Syring.—p. 619.
Exploratory Thoracotomy in Diagnosis of Lung Carcinoma. F. Krampf.—p. 639.
Hydatid of Lung; Surgical Treatment. M. Makkas.—p. 645.
*Radical Operation on Phrenic Nerve in Pulmonary Tuberculosis. T. Naegeli and H. Schulte-Tigges.—p. 676.
Rectus Abdominis. L. H. Strauss.—p. 685.
Treatment of Tuberculous Peritonitis with Tincture of Iodine. S. Stocker-Dreyer.—p. 699.
So-Called Foreign Body Tuberculosis of Peritoneum. A. Paetzold.—p. 711.
Rare Complication of Mesenteric Gland Tuberculosis. H. Grimm.—p. 718.

Treatment of Heart and Vascular Disturbances Before, During and After Operation.—In cases not requiring an immediate operation much can be done in a prophylactic way to improve the state of the cardiovascular system. Obese patients are reduced through diet, emaciated and dehydrated individuals are given sufficient alimentation and water. Patients with nephritis and dropsy improve on a special diet. These persons are particularly predisposed to infections. The starvation which necessarily precedes certain operations on the digestive tract is counteracted by introduction of glucose solution per rectum. Patients with weak hearts require digitalization. Hirsch objects to systematic preoperative digitalization of all patients on the ground that it may lead to an unnecessary and even dangerous stimulation of the vagus. Operative shock, particularly in persons with arteriosclerosis or with disease of the aorta or the coronary arteries, is combated by intravenous injection of dextrose. Cardiac stimulants, such as camphor and caffeine, are likewise indicated. He objects to venesection as a routine measure in hypertonic patients. Anesthesia in itself has a lowering effect on blood pressure. On the other hand, small doses of digitalis are indicated if signs of cardiac weakness are present. Cardiac syncope occurring in the course of anesthesia is combated by artificial respiration with oxygen and by massage of the heart. Direct injection of epinephrine or of caffeine into the heart is effective at times. It is useless in syncope resulting from vasomotor paralysis of central origin, or from high grade myocardial degeneration. Cardiac failure resulting from loss of blood is most effectively treated by blood transfusion. Less efficacious are intravenous or subcutaneous injections of alkaline normal sodium chloride solutions.

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Resistance to Cold of Transmissible Animal Cancer.—Mouse carcinoma which had been exposed to the freezing effect of liquid air for from 30 minutes to four days was successfully transplanted without any apparent loss of virulence. Rous chicken sarcoma has proven to be equally resistant to the effects of freezing. Transmission was accomplished after freezing for forty-eight hours. Addition of diatomaceous earth to the tumor material increased its resistance to freezing very materially. Skin flaps of mice exposed to liquid air for two minutes perished fourteen days later. Exposure of tissue cultures demonstrated that no cell can survive more than five minutes' exposure to freezing. Koose and Lemmel, therefore, conclude that their experiments prove the existence of a transmissible, extracellular carcinoma substance.

Goiter Problem: Toxic Adenoma.—Bircher differentiates exophthalmic goiter from toxic adenoma on morphologic grounds. With the exception of exophthalmos, both forms present the same symptoms in varying degree. The difference in the effect of iodine in the two groups is probably due to the fact that exophthalmic goiter is an intoxication due to dysthyroidism, diminished or insufficiently iodized secretion, whereas in toxic adenoma there is actual hyperthyroidism, excessive secretion, which, however, is normal and fully iodized. Attention is called to two other forms, goiter heart as an entity per se, and iodism or a state of toxic goiter induced by iodine intake. He is inclined to accept Chvostek's view that goiter heart is a monosymptomatic form of hyperthyroidism. Apparently the question of cardiopathy in goiter is far more complex than was hitherto supposed. A simple nontoxic goiter can result in cardiopathy. In endemic goiter regions the number of cardiopaths is greater than in regions free from goiter. Since the introduction of iodine as a prophylactic measure, there has been a very material increase in the incidence of toxic goiter, both in Switzerland and in America. Out of 40,000 reported cases of goiter in Switzerland, representing 1 per cent of the entire population, 2,226 were due to ingestion of iodine in one form or another. One hundred and sixty-seven of these persons had taken iodized salt only. Bircher has had seventy cases of iodism. Histologic studies showed a preponderance of diffuse struma, rather than adenoma, exactly the opposite of the experience in the United States. This is the more significant because 90 per cent of all goiters in Switzerland are adenomatous. Iodism cannot be regarded as a pure toxic adenoma. The symptomatology of these cases suggests exophthalmic goiter in a mild form. Thyroidectomy is indicated and gives good results.

Radical Operation on Phrenic Nerve as an Independent Procedure in Treatment of Pulmonary Tuberculosis.—Naegeli and Schulte-Tigges performed a radical phrenic nerve exeresis in more than 100 cases of pulmonary tuberculosis. In only two cases did they fail to produce a rise in the level of the diaphragm. The operation was always performed under local anesthesia and the patients were returned to sanatoriums after a few days. The operation, when considered alone, gave good results in patients with an isolated cavity or system of cavities, but without much infiltration or extensive adhesions about them. A result similar to that from pneumothorax was obtained. The advantage over the latter lies in the simplicity of the operation and in the freedom from the complications and dangers of pneumothorax. Results were not gratifying in cases with indurative or indurative pneumonic lesions, or in cases in which the operation was performed because pneumothorax could not be induced.

Deutsches Archiv für klinische Medizin, Leipzig

157: 257-380 (Dec.) 1927

*Aplastic Anemia. B. Ugriumow and J. Idelsohn.—p. 257.
Initial Ventricular Deflection in Electrocardiogram; Its Relation to Constitution. M. Stoss.—p. 263.
Nature of Disturbance of Coagulation in Hemophilia. E. Hartmann.—p. 274.
Pneumotachographic Picture in Bronchial Asthma. Englmann.—p. 280.
Pepsin Content of Gastric Juice. F. Delhougne.—p. 299.
*Leukemia and Tuberculosis. H. Hemmerling and H. Schleussing.—p. 309.
*Function of Circulatory Tract in Arteriosclerosis. F. Lange.—p. 320.
*Pulse Volume in Cardiovascular Lesions. W. Mobitz.—p. 359.
"Pernicious Anemia": Reply to Hoff. Arneth.—p. 376.

Aplastic Anemia.—Ugriumow and Idelsohn report a case of aplastic anemia after arsphenamine treatment. In another case, the clinical and the provisional anatomic diagnosis of acute myeloid leukemia had to be reversed in favor of aplastic anemia because, in addition to complete aplasia of the bone marrow, there was insignificant extramedullary myelopoiesis. The entire necropsy picture suggested a septic origin; a bacteriologic examination was not made.

Leukemia and Tuberculosis.—A case of leukemic myelosis and one of lymphatic myelosis, in which tuberculous lesions were discovered at necropsy, are reported by Hemmerling and Schleussing. Their hypothesis is that the tuberculosis was primary and that it exerted a nonspecific stimulation on the indifferent cells of the vessel walls, with the result that these cells took on the form and function of hematopoietic tissue.

The Circulation in Arteriosclerosis.—Lange found that heat, cold, pain, emotion, etc., had much less influence on the circulation in patients with pure arteriosclerosis (hypertonia excluded) than in persons with normal arteries. This held for all the portions of the circulatory tract investigated, including the internal organs. The main cause of this disturbance in the general circulation is not the lessened elasticity of the arterial walls or the difficulty experienced by the blood in passing through the rigid arterioles, but an impairment in the function of the circulatory tract to accommodate itself to changed conditions by widening and narrowing. This functional weakness must be caused by weakness of the media, as the only innervated muscular layer in the arterial wall. In previous researches he had demonstrated pathologic changes in the media in sclerotic arteries. This explains how it is that the arteriosclerotic patient can keep up his usual occupations, in his accustomed routine, for a long time, if novel physical or mental demands are not made on him.

Pulse Volume in Cardiovascular Lesions.—Mobitz gives the details of a number of cases of clinically compensated changes in the heart and vessels and of beginning circulatory decompensation without pulmonary changes, in which the pulse and minute volumes were determined by Henderson and Haggard's ethyl iodide inhalation method. In normal subjects at rest on the back, the relation between body weight and pulse volume was found to be more constant than the relation between body weight and minute volume or between oxygen consumption and circulation. The pulse index (pulse volume in cubic centimeters divided by body weight in kilograms) gives valuable information, Mobitz holds, on the condition of the heart. A low index may point out a mitral stenosis or a beginning cardiac insufficiency hardly recognizable by other means.

Deutsche medizinische Wochenschrift, Berlin

54: 127-170 (Jan. 27) 1928. Partial Index

*Tuberculosis in Japan. R. Arima and I. Ishihara.—p. 127.
Persistance of Spirochete of Syphilis in Mouse Over Long Period. W. Kolle and H. Schlossberger.—p. 129.
Venous Retia Mirabilia in Closure of Certain Openings of Human Body. H. Stieve.—p. 130. C'en.
Treatment of Addiction to Alkaloids. P. Wolff.—p. 134.
Endolumbar Injections and Irrigation in Diseases of Central Nervous System, Especially with Quinine. E. Kaufmann.—p. 136.
*Lead Treatment of Malignant Tumors. A. Kaemmerer.—p. 138.
Testes and Ovaries as Articles of Diet. H. Steudel and G. Joachimoglu.—p. 139.
Massive Pulmonary Infiltration in Childhood. L. Maas.—p. 141.
"Ointment Tinctures" in Treatment of Skin Disease. C. Bruck.—p. 142.
Cannula Holder for Intravenous Injections. L. Isaak.—p. 145.

Epidemiology of Tuberculosis in Regions of Japan Previously Free from Tuberculosis.—Arima and Ishihara describe three instances of the spread of tuberculosis in previously uninfected communities in Japan. Like other acute infectious diseases, it takes a fulminating course. Allergic symptoms, such as pleuritis and scrofula, almost never appear. Pulmonary hemorrhages and surgical tuberculosis are almost entirely absent. It is always spread indoors by the fresh droplet in fluid condition.

Lead Treatment of Malignant Tumors.—Of fourteen malignant tumors, eight of the uterus, four of the breast and two of the skin, three showed softening after the second or third injection of a colloidal lead solution. Two patients had a

slight renal irritation. There was decrease in the number of neutrophils with a stationary leukocyte count. The lymphocyte count rose.

Klinische Wochenschrift, Berlin

7: 145-192 (Jan. 22) 1928. Partial Index

*Nervous Reflex Disturbances in Duodenal Ulcer. L. Hess and J. Faltitschek.—p. 150.
*Gas Treatment of Malignant Tumors and Cachectic Conditions. B. Fischer-Wasels.—p. 153. C'en.
Lipase in Saliva. K. Scheer.—p. 163.
*Uremia Treated Intravenously with Hypertonic Sodium Sulphate. K. O. Møller.—p. 165.

Nerve Reflex Disturbances in Duodenal Ulcer.—Fourteen cases of duodenal ulcer are tabulated by the authors. They conclude that a decrease of secretion after atropine is demonstrable only when the splanchnic nerve is intact. If there is disturbance of the sympathetic paths in ulcer patients, as may be taken for granted from the experiments with paravertebral injection, then the effect of atropine in diminishing secretion is absent when the stomach is severely burdened with the test meal.

Gas Treatment of Malignant Tumors and Cachectic Conditions.—The mice (controls and those with tumors) breathed the gas for three hours every day except Sunday. The gas mixture used was 4.5 per cent carbon dioxide in pure oxygen. Injections of dye and iron compounds were given, some intravenously and some subcutaneously, always at a distance from the tumor. In most animals, even in those which recovered completely and are still living, only one injection was made. The mice treated numbered 1,481; the controls, 296. If the gas mixture treatment was begun two or three weeks after implantation of the tumor, the effects were slight; if it was begun immediately, the tumor did not grow in 55 per cent of the cases. Among thirty-six mice with tumors in which treatment with gas and simultaneous intravenous injection of iron compounds was begun the second or third week after implantation, there were two complete cures. If those mice in which no living tumor cells could be found with the microscope are included, the number of cures is increased to 5, or 20 per cent. If the mice were treated immediately after the implantation with the author's dye compounds (without gas), then in 55 per cent of the mice treated with one compound and in 64 per cent of those treated with another no tumors developed. If the dye used in the injections was combined with other iron compounds, the number of unfruitful implantations rose about 20 per cent. In only a few cases did the tumors grow in spite of the dye-iron injections.

Uremia, Treated Intravenously with Hypertonic Sodium Sulphate.—Møller gave intravenous infusion of sodium sulphate in strongly hypertonic solutions in two cases of uremia. In one case, in which the uremia was the result of a renal insufficiency of long duration, the procedure had no effect. In the second case, in which the uremia appeared without previous signs of renal insufficiency, the infusion brought about great improvement.

7: 193-240 (Jan. 29) 1928. Partial Index

*Suggested Method for Determination of Paternity. O. Thomsen.—p. 198.
Metabolism of Stationary and Growing Tissues. O. Rosenthal and A. Lasnitzki.—p. 200.
Liver Extract Treatment of Pernicious Anemia. R. Seyderhelm and G. Opitz.—p. 205.
Hemoglucosedimeter: II. E. Kaufmann.—p. 206.
Cholesterol Content of Blood Serum After Roentgen-Ray Irradiation. R. Hubert.—p. 208.
Dioxyacetone in Treatment of Diabetes. M. Grossmann and S. Pollak. —p. 211.
*Influence of Ultraviolet Irradiation on Metabolism. A. Lippmann and H. Völker.—p. 213.
Blood Picture in Pernicious Anemia. Arneth.—p. 214.
Reply. I. Zadek.—p. 214.
Perna Disease or Chlorine Acne. Teleky.—p. 214.

Suggested Individual Determination of Paternity.—Thomsen has studied the inheritance of characteristics, especially finger anomalies, with a view to determining paternity by comparing for certain dominant characters.

Influence of Ultraviolet Irradiation on Metabolism.—The basal metabolism was raised for a short time after ultraviolet irradiation. The elevation was still transitory even when the irradiations were combined with large doses of iodine. Irradiation had no effect on residual nitrogen nor on the blood sugar. Among ten diabetics who had all presented constant values, three showed, during a series of irradiations, a gradual and slight diminution of sugar. A lasting result or an effect on the amount of urinary sugar was never met.

Monatsschrift für Kinderheilkunde, Leipzig

37: 193-288 (Dec.) 1927

*Digestive Effect of Pancreatic Secretion of Infants on Cell Nuclei. J. von Lukács.—p. 193.
*Lymphocytosis in Influenza. C. de Lange.—p. 202.
Syphilis and Aphthous Stomatitis in Infants. E. Flusser.—p. 205.
*Diabetic Child Resistant to Insulin. P. Sztavrovszky and K. Waltner.—p. 214.
Febrile Congenital Syphilis of Liver in Boy Aged Fourteen. W. Mikulowski.—p. 218.

Digestive Effect of Pancreatic Secretion of Infants on Cell Nuclei.—Chopped, well cooked calf's liver was placed in small, muslin bags and these were fed to infants for the purpose of ascertaining the effect on the liver of the pancreatic secretion. Von Lukács says that the infant's pancreatic secretion is unable to digest the cell nuclei of animal tissues. However, free purine bases can be liberated from such nuclei without destruction of the nuclei. More than one half of the purine bases are removed from the nuclei by ordinary cooking—63.5 per cent in the case of liver.

Lymphocytosis in Influenza.—De Lange relates the case of a child, aged 9 months, ill with influenza, who had a leukocytosis of 41,250. The differential count showed: polymorphonuclears, 14.6 per cent; lymphocytes, 84 per cent. The hemoglobin percentage was 61. The liver was very much enlarged. The author warns against mistaking such a case for leukemia.

Diabetic Child Resistant to Insulin.—Sztavrovszky and Waltner report the case of a girl, aged 12, who had an outstanding diabetes with from 3.5 to 7 per cent of sugar in the urine. The sugar was reduced to 1.5 and 4 per cent by restriction of carbohydrates in the diet (60 Gm. daily), but remained unaffected by the injection of various preparations of insulin, even as much as 300 units daily, in one, two, three or four injections. This is said to be the first case of its kind on record.

Münchener medizinische Wochenschrift, Munich

75: 117-160 (Jan. 20) 1928. Partial Index

*Diagnosis of Acute Appendicitis. P. Clairmont.—p. 117.
*Sauerbruch-Herrmannsdorfer-Gerson Tuberculosis Diet. J. Schüller.—p. 118.
Hypoglycemic Reactions. K. Brucke.—p. 120.
Polysegmental and Unisegmental Root Interruption in Its Action on the Stomach. E. Freude.—p. 121.
"Iron Activity" and Its Practical Importance. K. Kötschau and A. Simon. —p. 122.
*Sepsis Produced by Micrococcus Catarrhalis. H. Nagell.—p. 124.
Usefulness of Besredka's Antivirus Bouillon. G. Lutz.—p. 125.
*Closure of Umbilical and Abdominal Wall Hernias with Silver Network. R. Goepel.—p. 127.
*Deep Slip Knot Removable from Without. L. Paul.—p. 130.
Uterine Ruptures. M. Krüger-Franke.—p. 132.
*Dietetic Treatment of Hemophilia. P. Ziegelroth.—p. 133.
Transient Tonus Disturbances of Cerebral Vessel Innervation by Caloric Irritation of Vestibularis with Epinephrine Sound Experiment. O. Muck.—p. 135.
Aid to Vision in Presbyopia. K. L. Elsner.—p. 136.

Diagnosis of Acute Appendicitis.—Clairmont reviews 150 cases admitted to the hospital with a diagnosis of acute appendicitis. In 58 per cent of the cases the diagnosis was confirmed by the clinical examination, by the changes found at operation and by the microscopic examination. In about 20 per cent of the cases the diagnosis of acute appendicitis could not be confirmed by clinical examination. In another 20 per cent there was clinically an acute appendicitis which was not confirmed by the anatomicopathologic diagnosis.

Sauerbruch-Herrmannsdorfer-Gerson Tuberculosis Diet.—Seven patients with severe surgical tuberculosis treated by Schüller with the Sauerbruch-Herrmannsdorfer-Gerson diet gained in weight. The temperature became normal in two cases in which it had been elevated. In one instance lupus was cured, in another very much improved. In five cases clinical improvement was marked and in some there was

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roentgenologic improvement as well. Two were unimproved. The manner in which the diet influences the disease is not clear. It gave more calories than the patients had been accustomed to consume and is very rich in vitamins.

Sepsis Produced by Micrococcus Catarrhalis.—In a boy, aged 19 years, whose case is reported by Nagell, the appearance of chills and fever was taken by his family physician to indicate a return of the malaria with which the boy had been treated for syphilis. The fever did not yield to quinine. Later a septic embolic exanthem appeared. In four samples of the blood and in a specimen of the exanthem the same diplococcus was found. By elimination it was shown to be *Micrococcus catarrhalis.* There were no metastases in the internal organs.

Closure of Umbilical and Abdominal Wall Hernias with Silver Network.—A silver wire chain network heals up well in the wound, causes no disturbances and protects the patient against a recurrence of the hernia. It may be used in simple and in complicated cases of umbilical and abdominal wall hernias, where taut sutures would cut through the soft parts and new hernias would result. The conditions for success include complete asepsis, very careful hemostasis, a well nourished skin to cover the silver wire net and freedom from intertrigo and decubitus. The wearing of an abdominal binder is only necessary in complicated cases. Where there is a very thin abdominal wall, a bluish color appears, evidently due to the formation of silver oxide and silver sulphide. In none of the author's fifty-six cases, was it necessary to remove the net on account of wound disturbance. Once there was a small hematoma leading to suppuration. On opening the abscess a few silver rings, lying free, were removed. In 92 per cent of the cases, the results were ideal. In four cases they were not completely satisfactory. An interstitial hernia between the silver wire net and the abdominal wall was considered as a possibility, but did not occur.

Slip Knot Deeply Placed and Removable from Without.—A slip knot easy to place in a small deep wound and easy to remove is described and illustrated.

Dietetic Treatment of Hemophilia.—Ziegelroth reports two cases of hemophilia in which he used a lactovegetarian diet in which all foods were eaten in their natural condition. Eggs were eaten raw and honey was substituted for sugar. It is possible that the mineral salts are more easily assimilated from foods in this form and that the clotting time of the blood is favorably influenced by the improved calcium metabolism.

75: 161-206 (Jan. 27) 1928. Partial Index

Physiologic Basis of Protein Therapy. Nonnenbruch.—p. 161.
*Serum Therapy of Puerperal Septic Infections. E. Gaessler.—p. 164.
*Treatment of Seasickness, Air-Sickness and Car-Sickness. O. Bruns and F. Hörnicke.—p. 167.
Superinfection with a Strain Obtained by Injection of Cultivated Spirochetes (Reiter) into the Rabbit's Testis. P. Mulzer and R. Nothhaas.—p. 169.
Hypoglycemic Reactions. K. Brucke.—p. 171.
New Method of Wound Treatment. T. Reisenthel.—p. 173.
Future Development of Gastroscopy. R. Schindler.—p. 174.
Topical Diagnosis of Brain Tumors. O. Muck.—p. 175.
Club-Foot Formation in Twins. G. Smilga.—p. 177.
Bismuth from Historical Point of View. J. Hochradel.—p. 177.

Serum Therapy of Puerperal Septic Infections.—Of the 400 cases of febrile puerperal diseases discussed, 341 were obstetric cases and fifty-nine abortions. Streptococcus antitoxin was given intragluteally in doses of 50 cc. which were usually repeated daily until there was a fall in temperature. On the average the patient received 100 cc. Of the 400 patients, pulse and temperature returned to normal in a short time in 156. If the patients treated with operative and obstetric measures as well as antitoxin be included, 190 were cured. There were twenty deaths, but of these only three are considered as attributable to failure of the method. In forty-one cases there was an exanthem with rise of temperature lasting from six to eight days after the first injection. The symptoms were never alarming and should not be given much importance in face of the life-saving action of the serum.

Treatment of Seasickness, Air-Sickness and Car-Sickness.—In order to avoid seasickness, a person should lead a very regular life during the voyage. Sleep should not be disturbed nor the digestive organs overburdened. One should spend as much time as possible in the horizontal position in a location amidships. The general psychic tension should be relieved with sedatives; barbital is the most suitable. Odors of machinery and of cooking should be avoided, as well as the wearing of any glasses to which one is not accustomed, and gazing at the waves or at the dipping tip of the mast. The fact that at the height of seasickness there is a fall in blood pressure and also that persons with high blood pressure are rarely seasick suggests the administration of blood pressure raising drugs. A combination of atropine and strychnine is recommended.

Vestnik Rentgenologii i Radiologii, Leningrad

5: 339-412, 1927. Partial Index

Constitution and Roentgenology. A. U. Sternman.—p. 339.
*Dextrocardia. C. A. Reinberg and M. E. Mandelstam.—p. 349.

Dextrocardia.—Reinberg and Mandelstam analyze the results of clinical, roentgenologic and electrocardiographic investigations of thirty-nine cases of dextrocardia. Twenty-four of these were cases of total transposition of viscera, five of congenital isolated dextrocardia and ten of acquired dextroposition of the heart. The frequency of total transposition in their material was one in 1,500 roentgenologic examinations. They distinguish four types of dextrocardia: (1) Dextrocardia in the presence of total transposition of viscera. This type gives a clear-cut, characteristic roentgenogram and a reversed electrocardiogram. (2) Isolated congenital dextrocardia with inversion of cardiac chambers, giving an abnormal, mirror image of the heart and aorta, and a normal disposition of abdominal viscera, and a reversed electrocardiogram. (3) Isolated congenital dextrocardia with normal relation of diameters. The heart is located on the right side, the aorta passes across the left bronchus. A normal electrocardiogram is obtained. (4) Acquired dextrocardia possessing the same characteristics as type III but differentiated by the existence of pathologic changes in the neighboring organs. Combined roentgen-ray and cardiographic studies help differentiate the different types. The level of the diaphragm is determined by the location of the heart and not of the liver. That half of the diaphragm on which the heart rests occupies a lower level.

Acta Chirurgica Scandinavica, Stockholm

63: 1-105 (Jan. 26) 1928

*Origin of Intussusception. S. Lundberg.—p. 1. In English.
Leukemic Kidney Tumors. J. Foged.—p. 13.
Two Cases of Renal Tuberculosis Treated with Sanocrysin. T. Eiken.—p. 34.
Frequency and Duration of Osteitis After Osteosynthesis. E. Dahl-Iversen.—p. 41. In English.
Submucous Lipoma of Intestine. E. Poläk.—p. 65.
Five Cases of Myoma of Gastro-Intestinal Canal. E. Schildt.—p. 77.
*Chronic Gastritis Regarded from Surgical Standpoint. J. Nicolaysen.—p. 87. In English.

Origin of Intussusception.—Lundberg gives an account of two cases of intussusception of the small intestine in which a tumor was found in the invaginated oral part, immediately inside the neck of the intussusception. These cases cannot be explained by the current view of the mechanism of intussusception. In the author's opinion, the course of events in ileus caused by intussusception is as follows: Physiologic invaginations, occurring particularly in children, proceed onwards along the intestine, through inversion at the invagination "collar" as well as at the apex of the intussusceptum. Incarceration arises with accompanying symptoms of ileus when the inversion ceases at the apex of the intussusceptum while continuing at the invagination "collar." Tumors, diverticula of the cecum and the ileocecal valve constitute the usual causative factors in bringing about incarceration.

Chronic Gastritis Regarded from Surgical Standpoint.—In seven out of 107 gastrectomies for duodenal or gastric ulcer, no ulcer could be detected at the operation, the cause of the symptoms being chronic follicular gastritis with multiple hemorrhagic erosions. Nicolaysen describes his cases and reviews the literature of this disease. The treatment consisted in gastrectomy of the affected (pyloric) part of the stomach and gave good results.

Acta Medica Scandinavica, Stockholm

68: 1-95 (Jan. 30) 1928

Case of Pyemia Caused by Influenza Bacillus and Associated with Acute Meningitis and Arthritis. T. M. Vogelsang.—p. 1.
Pleurisy and Tuberculosis Following Pleurisy. O. Scheel and T. Föien. —p. 5.
Hydrogen Ion Concentration and Ferment Content of Duodenal Juice. A. Norgaard and T. E. H. Thaysen.—p. 18.
Quantitative Determination of Gastric Secretion. Z. Stary and P. Mahler. —p. 32.
*Functional Tests in Acute Hemorrhagic Nephritis. E. Bondo.—p. 43. In English.
Extrapyramidal Symptoms After Accidents. Å. Barkman.—p. 63.
Rôle of Liver in Purine Metabolism. Paroulek.—p. 79. In English.

Functional Tests in Acute Hemorrhagic Nephritis.—Bondo applied Nyiri's thiosulphate test and Strauss' water test for kidney function to twenty-two patients (mostly children with acute hemorrhagic nephritis secondary to scarlet fever or to other acute infections). With the exception of one case the tests agreed at the onset of the nephritis. In four cases out of fourteen, both tests gave normal values throughout the entire course of the disease. In ten cases there was a diminution of the thiosulphate secretion and of the dilution power or the concentration power or both functions. The dilution power was diminished more often than the concentration power. The two reactions did not always become normal at the same time, and they usually became normal at a time when the urine still contained albumin and blood. The water test and the thiosulphate test were always normal when albumin and blood had disappeared from the urine. There are various sources of error, which are discussed. In twelve of these patients the blood urea was determined by von Slyke's method. In seven it exceeded 40 mg. per hundred cubic centimeters in the morning. It became normal in every case in from three to four weeks from the onset of the disease.

Acta Tuberculosea Scandinavica, Copenhagen

3: 191-384, 1928

Prevention of Tuberculosis. G. Neander.—p. 191. In English.
*Sanocrysin Treatment. C. H. Würtzen and N. Sjørslev.—p. 319. In English.
*Nature of Sanocrysin Reaction. H. Møllgaard.—p. 337.

Sanocrysin Treatment: Immediate and Permanent Results.—The method used by Würtzen and Sjørslev, with modifications to suit the individual case, consists in administering 0.5 Gm. of the drug for twelve doses at intervals of three or four days. A rest period of from six to eight weeks is allowed to elapse and then a second and final series is given. The occurrence of albuminuria, stomatitis or an exanthem is a contraindication to further injections. The fact that there were sixteen deaths in a series of eighty-four cases, is explained by the advanced state of the disease in many of the patients. A number of these had simultaneous laryngeal and intestinal tuberculosis. Tubercle bacilli disappeared from the sputum in one fifth of the cases, in spite of the fact that cavities existed in seven. In forty patients there was improvement of the "stethoscopic conditions" and in twenty-three of these there was also "improvement in the roentgen-ray findings." In eleven cases a high temperature became normal. Comparing these results with the control material, the authors point out that in the latter the number of deaths was both relatively and absolutely higher, that there were many fewer cases in which a high temperature became normal, and that in only two cases did the bacilli disappear. In fifty-eight patients the results of sanocrysin treatment were followed over a period of one year. Of these, fourteen are dead, seven could not be found, ten were unfit for work and twenty-seven were fit for work.

Nature of Sanocrysin Reaction in a Tuberculous Organism.—Møllgaard demonstrates by animal experiments that a healthy organism does not react with shock and rise of temperature to sanocrysin injections. An organism sensitized to tuberculosis reacts in the same way as a healthy one, provided that sanocrysin is not injected directly into the tuberculous focus. The degree of the reaction in a tuberculous animal depends on the strain of the bacillus as well as on the state of the infected tissue. Direct injection of sanocrysin into a tuberculous focus produces a reaction in cases in which an intravenous injection will fail. Shock and albuminuria can be increased by the intravenous injection of tuberculous serum. Normal or diphtheria serum does not have this effect. The action of sanocrysin is not that of a simple drug but of a chemical affinity on the part of sanocrysin for certain elements in the tuberculous process.

Hospitalstidende, Copenhagen

70: 1155-1178 (Dec. 8) 1927

*Prostatic Cancer. O. Bouet.—p. 1155.
*Cases of Absence of Left Lung. L. Heerup.—p. 1165.

Prostatic Cancer.—Of Bouet's seventeen patients with prostatic lesions, three had cancer of the prostate with unsuspected metastases revealed by roentgen-ray examination. He reviews the recent literature on prostatic cancer, with special regard to metastases. Bone metastases are found on the first examination in from 20 to 30 per cent of the cases of prostatic cancer; their seat is almost exclusively in the lumbar vertebrae, pelvis and upper part of the femur. Symptoms may be absent. Roentgen-ray treatment seems to afford relief and temporarily to check further development. The average length of life after the appearance of the metastases is about nine months; the average length of life in untreated cancer of the prostate, about two and a half years. The average length of life after prostatectomy is about two and a half years; in about 10 per cent of the cases, more than five years; the results after radium treatment are similar.

Absence of Left Lung.—In Heerup's patient, aged 72, there was complete absence of the left lung and pleural cavity. This is the eighteenth case in the literature. In none was a clinical diagnosis of the condition made.

70: 1205-1224 (Dec. 22) 1927

*Hereditary Anomaly in Growth of Thumb. O. Thomsen.—p. 1205.

Hereditary Anomaly in Growth of Thumb.—The deformity described by Thomsen consists of a shortening of the second phalanx of the thumb, the base being often broader than the distal joint surface of the first phalanx, causing a prominent flare at the tip. He has seen twenty cases with bilateral and seventeen with unilateral occurrence, in fifteen unrelated families. The anomaly is attributed to a single germ cell with dominant character. Phenotypical women as well as men may be transmitters. In dominant anomalies, which never skip a generation, the unilateral occurrence is explained by the elimination of the germ cell on one side; in anomalies regularly latent, by a difference in the "gen milieu." The pathogenetic basis of the anomaly is partly a premature ossification of the growth zone in the second phalanx of the thumb.

Ugeskrift for Læger, Copenhagen

90: 77-102 (Jan. 26) 1928

*Chronic Nasal Discharge. A. Plum.—p. 77.
Studies on Blood Quantity in Man. S. A. Holbøll.—p. 80.
*Corrosion from Strong Acids (and Alkalis). L. Christensen.—p. 86.

Chronic Nasal Discharge.—In Plum's patient there was inflammation of the upper maxillary cavities with constant pain on the left side of the head and chronic bilateral nasal discharge, and history of radical operation on the left maxillary antrum. Plum sees here an indication for resection of the maxillary antrum (Denker), to be followed if necessary by operation on the frontal sinus (Halle), and finally by adenotomy. Temporary treatment by massage and electricity is indicated for the neuralgia, with possibly resection of the left concha media.

Corrosion with Strong Acids (and Alkalis).—Christensen describes an especially grave case of corrosion in a man, aged 24, with death one and a half hours after taking about 200 cc. of hydrochloric acid. In the nine other cases of corrosion from acid or alkali reported, death occurred in from two hours to twelve weeks. He says that in cases of violent poisoning from acids death is due to the lowered alkalinity of the blood; in cases fatal in from one to several weeks the cause lies primarily in cessation of gastric function, and in gastric perforation. Corrosion from acids caused a firm, dry gangrene, while the strong alkalis lead to colliquative necrosis. Severe corrosion from alkalis is uncommon, but exceedingly grave, frequently causing mediastinitis with rapidly fatal outcome. The less violent corrosions from alkalis give esophageal strictures with relatively good prognosis if the stomach is not extensively affected.

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